

The last of an important ecosystem environmental sciences essay

[Environment](#), [Ecology](#)



The Hatchie River is the lone staying of course weaving, undammed and unchannelized river of the Lower Mississippi Valley in Tennessee, doing it geographically and biologically important. The river flows through both Mississippi and Tennessee before eventually emptying into the Mississippi River. Hatchie River is fed by many feeders and flows through a comparatively level flood plain. Chemically, the river faces jobs from siltation and pollutants from industry, agribusiness, and other beginnings non easy identifiable. This river 's ecosystem construction is as dynamic and diverse as the workss, animate beings and people that reside in or base on balls through it. This river system, particularly its bottomland hardwood woods, has many maps some of which are wildlife home ground and a biological filter for the copiousness of foods that it carries. Hatchie River is a valuable ecosystem non merely because it exists but because of its importance to scientific discipline and wildlife and is a reminder of what used to be. Though Hatchie has managed to get away channelisation and impounding itself, many of its feeders have non which has led to many concerns affecting deposit, altering land usage and chemical pollutants doing an addition in both habitat loss and hapless H₂O quality. A The undermentioned information will explicate the significant importance of Hatchie River as a unique and endangered species.

Snaking through parts of Mississippi and Tennessee, the Hatchie River is more than 200 stat mis long (`` The Nature Conservancy " 2013) . The headwaters of the Hatchie are located in Mississippi sou'-west of Corinth in Union County and flows in an unreal drainage canal which continues about to the Tennessee State line (Diehl 2000) . A From that point the river flows

north and west through McNairy, Hardeman, Haywood, Madison, Tipton and Lauderdale Counties in Tennessee before emptying in the Mississippi River (Steed 2002) . The Tennessee part of this river flows of course and unimpeded through the Gulf Coastal Plain.

The ecosystem represented by the Hatchie River is delicate and its morphology, hydrology and chemical science are intertwined in such a manner as to do each and every portion a continuum of a mega-organism. It is impossible to discourse the rivers hydrology without besides turn toing the workss and animate beings that are dependent upon it. Because of this, as with any wetland system, the system 's dynamic nature can non be entirely represented by a individual species of dominant tree or bush. This river system is a combination of many classes of vegetive features while dependant on certain belongings of the dirt and inundation governments at different degrees of lift and distance from the natural meander of Hatchie River. Studies conducted at Hatchie National Wildlife Refuge (HNWR) in Brownsville, Tennessee have shown that flora nowadays in an country is significantly related to A changing grades of streaking and/or gleying A (Steed 1979, Steed, Plyler, and Buckner 2002) . A In Steeds 1979 survey he indicated that forest screen can be separated into two wide types: hydroseric and mesic. The hydroseric type occurred in countries that remained saturated, sing extended anaerobic activity and included communities that were dominated by Tupelo Gum, Bald Cypress or Overcup oak based on increasing grades of gleying respectfully (Steed 1979) . The mesonic type occurred in countries that were at times afloat but dry during the turning

season and included assorted communities of Sweet gum, willow oak, cherrybark oak and many others (Steed 1979) . A In add-on, in Steed 's joint research of 2002, he and his spouses indicated that there were definite relationships between dirts and dirt drainage categories, topography, and species of trees (Steed et al 2002) . So the connexion between dirt, H2O and workss becomes evident.

The Hatchie River is more than dirt, H2O and flora. This alone trace of bottomland hardwoods that one time covered huge countries of the Mississippi Alluvial Valley is home to many animals, common and rare. Volumes could be and hold been written on the many of import maps of the Hatchie River ecosystem and one would be distressed to state which is most important. A As it carries vitalizing foods down its unimpeded channel, the Hatchie deposits them all along its flood plain to organize alone dirts that are some of the richest in America. These foods create chiefly two major types of dirt, Amagon and Falayar, which are extremely productive for many species of bottomland hardwood trees, both land and aquatic workss, and are responsible for fertile croplands that are extremely prized by agribusiness.

[General dirt map Hatchie River Basin study, Tennessee and Mississippi.

Writer: United States. Soil Conservation Service. Publisher: Nashville, Tenn. ,

1969] The Hatchie 's seasonal implosion therapy has for many 1000s of old ages brought life with its foods to the dirt of the flood plain, maintaining lands as fertile now as even before Native Americans foremost came to this land. Mankind and animate beings have long depended on the Hatchie 's being. Having birthed these exuberant home grounds all along its flow, the

Hatchie provides amazing ecological benefits and services to each 1. The hardwood woods, cane interruptions, gangrenes, oxbows, boggy wetlands, and lakes it creates as it meanders are all place to pullulating life. A A major map of this system is wildlife home ground. Because of its singularity, parts of the riverine system have been preserved at both province and national degrees. Hatchie River National Wildlife Refuge, Lower Hatchie National Wildlife Refuge, John Tully Wildlife Management Area and Fort Pillow State Park have all preserved small pieces of this great river and its surrounding landscape (Nature conservancy Mississippi river precedence site) . Hatchie River and its bottomland hardwood woods support many species in many systematic orders. Included in this tremendously diverse group of animate beings, several species are considered to be vulnerable, in demand of direction, threatened, or endangered. The Hatchie Burrowing Crayfish is endemic to an country of merely under 20, 000 estates on a individual feeder of the Hatchie River and considered to be critically endangered (Crandall 2010) . The Hatchie River and both National Wildlife Refuges have been designated as one uninterrupted IBA (Important Bird Area) by BirdLife International. In this country the Mississippi Kite, Cerulean Warbler, and Swainsons Warbler are species designated as In Need of Management by the province of Tennessee (www. tnbirds. org) . The Prothonotary Warbler is a pit squatter in afloat woods and its outstanding genteelness country is within the Mississippi Alluvial Valley (Prothonotary Warbler Web 2013) . A The Swainsons warbler, listed as a high preservation concern by Partners in Flight and on the Audubon Society 's ticker list, has, harmonizing to the Nature Conservancy, made slightly of a rejoinder to the Hatchie River country due to

the Restoration of bottomland hardwood woods ([www. tnwatchablewildlife. org](http://www.tnwatchablewildlife.org) and the Nature Conservancy) . Migratory birds utilizing the Mississippi flyway depend on the wetlands and the natural harvests provided by the Hatchie to prolong them as they travel each twelvemonth. Many species of birds, mammals and even insects and reptilians depend on the mast produced by bottomland hardwoods along the Hatchie 's length.

[U. S. Department of the Interior, Fish and Wildlife Service, Southeast Regional Office, April 2006

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[20CCP. pdf \]](http://www.fws.gov/southeast/planning/PDFdocuments/HatchieFinal/Hatchie%20Final%20CCP.pdf) A Hatchie River besides holds rare fish like the blue chump and northern madtom and is place to possibly more species of catfish than any other river in the north American continent ([nature. org](http://nature.org)) . Though these species belong to different categories of taxonomy, they all have in common the loss of home ground whether it be in the H2O or in the trees or someplace in between. Hatchie Rivers map as wildlife home ground is valuable to these and many other species. That value does non stop with wildlife but continues on to all of those that appreciate in one signifier or another the rareness of the wildlife and the conglobation that is the Hatchie River wetland system.

What other valuable maps does the Hatchie River perform and how are the benefits realized? Wetlands hold H₂O that from extra rain or possibly snowmelt in some countries and so easy let go of it to rivers and watercourses. A Hatchie River serves this map. However, the feeders that drain into the Hatchie have been channelized, there wetland-type countries have been destroyed ensuing in increased H₂O speed through those feeders. The consequence is eroding of those stream Bankss which increases the sum of deposit they carry as they enter the chief channel of the Hatchie River. As clip base on ballss, increased siltation produces shoals and in utmost instances valley stoppers (Diehl 2000) . While both of these consequences in altered hydrology of the wetland system, vale stoppers are much more damaging to the bottomland hardwood woods and the river itself. A vale stopper occurs when heavy deposit fills the river channel coercing back-filling across the inundation field until a new river channel is realized harmonizing to Diehl mentioning work by Stafford C. Happ in 1975 (2000) . Harmonizing to Diehl, without control of highland eroding, Hatchie 's flood plain may stop up a fen and a topographic point where hardwoods can non last. Wetlands have varied and legion maps. They purify H₂O as it moves through the inundation fields and as this slow motion occurs some of the extra H₂O percolates through to the aquifer, reloading it. Many countries depend on this map to provide their citizens with clean imbibing H₂O. The filtration of H₂O through the inundation plains helps to take drosss such as chemical toxins and extra deposit and in some countries wetlands are developed for that exclusive intent. Some chemicals are taken up by certain wetland workss, efficaciously taking them from the H₂O and at the same clip

the above-ground parts of these workss assistance in pin downing larger atoms. The Hatchie besides creates many types of recreational, fishing, and runing chances as it flows to the Mississippi. Because of its entreaty to migratory birds, duck huntsmans are drawn to the Hatchie 's wetlands, fishermen come to partake of the many assortments found in its Watersss, cervid and Meleagris gallopavo huntsmans vie for lands along the Hatchie. Hunters and fishermen, every bit good as leghorns, campers, tramps, bird spectators and nature lovers all flock to the Hatchie, making incomes for those who portion in supplying all these Hatchie visitants with entree. The Hatchie provides rich dirts in which local husbandmans raise bumper harvests, cognizing about anything can be good grown in Hatchie dirts. Farm/foodanimate beings can be grazed on both deep-rooted harvests, natural grasses and hardwood masts. The Hatchie maps as a supplier to worlds, wild and domestic animate beings, aquatic life, birds, reptilians, insects, trees, and workss, and even industry.

A A A A A A A A A A Although the Hatchie has flowed freely and infinitely for 1000s of old ages, it is non without menaces and jobs. The steady rise in deposit from its feeders and from agribusiness, of all time increasing contaminations, altered flow, every bit good as atomization of home grounds and loss of woods are all endangering the very life of the Hatchie. Heavy sediment tonss flow into the Hatchie from most of the river 's 36 feeders. It is this implosion therapy that has brought life in the signifier of foods to the dirt of the flood plain, sing it remains as fertile today as it has been for a thousand old ages, even before the yearss when Native Americans first

began populating off this land. However, it is this really implosion therapy that has caused the human population to make inundation control undertakings, convert bottomlands to farms and spread out urban development. The invasion of civilisation has eliminated many full ecosystems in American history, and the Hatchie is susceptible to the same destiny without sound direction and attention. In the past century, upsetting wetland losings have occurred in the Hatchie wetlands of the Lower Mississippi Valley. A

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Tennessee Wildlife Resources Foundation (TWRF)]

Hardwood woods have been reduced to 20 % of what they one time were. A Loss of wetlands narrows the cistron pools for migratory birds as some no longer happen ground to halt along the Hatchie to feed or engender (Bonney et al. , 2000) . Chemical contaminations from industry, agribusiness and assorted other beginnings are another job faced by this river. Chemical contaminations were found in the H₂O, deposits, and fish of the Hatchie River and included: Organochlorine pesticides, Polychlorinated Biphenyls, polycyclic aromatic hydrocarbons, and CUPs (current-use pesticides) which include weedkillers like 2, 4 D and pesticides like Malathion (HNWR) . Mercury was besides detected and like the others was found to be within safe bounds (HNWR) . The Hatchie is losing cherished life as a consequence of these major impacts and has seen species of the Lower

Mississippi Valley going earnestly threatened, endangered, or nonexistent. Already the ruddy wolf and jaguar are gone, and the ivory-billed woodpecker and three warblers that called the Hatchie place are now either critically endangered or genuinely extinct. It may not be excessively late to change by reversal these jeopardies to the life of the Hatchie, but it will necessitate major preservation attempts, land and water direction with these rich home grounds uppermost in head, and better stewardship of this beautiful, rare hoarded wealth that is the Hatchie River and its home grounds. The Hatchie provides all who make usage of its presence with so many vitalizing maps that it deserves our protection to maintain it flowing free and clean.

Protecting Hatchie River can not be accomplished by an individual entity or organization. The continuity of this great wetland system will depend on continued partnerships between organizations of local, province and federal degrees every bit good as private land proprietors, husbandmen and users of the out-of-door infinite provided by Hatchie River. The Tennessee Department of Environment and Conservation Division of Water Pollution Control adopted what is called the watershed approach to water quality and preservation (Lower Hatchie). This approach has brought partnerships on many degrees. The Natural Resources Conservation Service, the United States Geological Survey, the U. S. Fish and Wildlife Service and the U. S. Army Corp of Engineers are involved on a federal degree harmonizing to the National Wildlife Refuges preservation programs. Federal partnerships provide changing services that enhance eroding control, wildlife

direction, preservation attempts, planning, planing, building and runing high quality and moderately priced civil plants H2O resource undertakings, care of river navigability, monitoring of inundations and drouths, roll uping extended scientific information, and offering a broad assortment of federally-funded undertakings that conserve, protect, and enhance fish, wildlife, and workss and their home grounds, every bit good as, advice to other bureaus and organisations. A On the province degree, TDEC Division of Water Supply, the State Revolving Fund, the Tennessee Department of Agriculture, West Tennessee River Basin Authority, and Mississippi Department of Environmental QualityA A service to assist forestall H2Opollution, supply low-interest loans to metropoliss and counties for effluent intervention, offer grant plans to better H2O quality and educate the populace, aid continue the natural flow of the Hatchie by bettering impaired feeders or job countries in the Hatchie itself, and supply monitoring and informations to province bureaus. On the local degree, Friends of West Tennessee Refuges, The Nature Conservancy, the Hatchie River Conservancy, The Chickasaw-Shiloh Resource Conservation and Development Council and The Friend of the Hatchie organisation and others provide voluntaries, fundraising, and educational plans to acquire the local populace involved in stewardship of all of the Hatchie 's home grounds. Some of the local spouses have invested in multimillion dollar plans to better H2O quality and halt eroding and to buy lands for saving of bottomlands and wetlands.

A A A A A A A A A A A The maps and values of the Hatchie River are countless and unreplaceable, doing the Hatchie cherished by many. Its

hydrogeomorphology makes it exceeding as one of a really few natural ecosystems left in America. Though Hatchie River is a wetland system, it is more than a individual home ground. It is a apogee of many that are so closely interlacing as to be identical from each other. Its uniqueness provides home grounds for animate beings that, in some cases, can be found nowhere else. Many obstructions must be overcome in order to continue what remains. Siltation, habitat loss and pollution are elephantine hurdling but non unsurmountable if bureaus, organisations and the citizens combine forces to continue this invaluable gem of West Tennessee.