

## TOTAL INSECT BIO-INVENTORY PROJECT OF THE MOBILE TENSAW DELTA

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### Introduction

In 1995 Mobile Bay became a part of the country's National Estuary Programs (NEP). Included in the NEP study area is the Bay proper and a large section of the Mobile / Tensaw Delta. The Mobile / Tensaw Delta (MTD), the nation's second largest river delta, is the 60-km long, 15-km wide stretch of wetland from the head of Mobile Bay, north to the confluence of the Alabama and Tombigbee Rivers. Much of this 900-km<sup>2</sup> area remains in a natural state, a remarkable fact given that the Southeast has very little land under federal or state protection. The MTD consists largely of cypress-gum swamps and bottomland hardwood forests, interlaced with streams, canals, bayous and marshes.

Two crucial facts make the delta an area of keen biological interest. First, it is one of the largest, intact, wetland ecosystems in the United States. Second, compared to other large river ecosystems, the biota of the MTD is exceptionally poorly known. Given that biological surveys are the cornerstone on which conservation priorities are established and management practices implemented, a detailed inventory of the MTD's biota is mandatory. Using seed money from the Alabama Center for Estuarian Studies (ACES), the Total Insect Bio-inventory Project (TIBP) of the Mobile/Tensaw Delta was established in the spring of 2000. Though neglected in many previous biological inventories, the importance of hyper-diverse groups, such as insects the arthropods, is now being recognized. Insects were selected as the target group because i) they are major contributors to ecosystem processes; ii) they constitute the bulk of metazoan diversity; iii) they respond quickly to environmental changes; and iv) they are ubiquitous and easily collected.

The TIBP will include the surveying, sorting, cataloguing, quantifying and mapping of entities such as genes, chromosomal inversions, demes, species, and communities. TIBP is intended to be a long-term program (20 years duration) and involve expertise from a variety of countries. The long term goals of the TIBP are to:

1. produce a complete bioinventory of the insect fauna in the Mobile/Tensaw Delta
2. spatially reference each collection to detect geo-spatial patterns of biodiversity
3. provide habitat information
4. identify threatened and endangered species
5. locate 'hot spots' of biodiversity
6. determine the degree of endemism
7. document genetic diversity and spatial-temporal dynamics of this diversity for select species
8. identify disease vectors (e.g., mosquitoes), their specific habitats, and population sizes
9. identify insect bioindicators of water quality
10. provide a reference collection of Delta insects

Provide below is a current list of species thus far identified from the Delta

### Current list of species

Order	Family	Species (or LTU)
Homoptera	Achilidae	Catonia carolina
Odonata	Aeshidae	Coryphaeschna ingens
Odonata	Aeshidae	Nasiaeschna pentacantha
Diptera	Anthomyiidae	Anthomyia oculifera
Diptera	Anthomyiidae	Emmesomyia socialis
Diptera	Anthomyiidae	Eustalomyia vittipes
Diptera	Anthomyiidae	Hylemya alcathoe
Diptera	Anthomyiidae	Pegoplata juvenalis
Lepidoptera	Arctiidae	Cosmosoma myrodora
Diptera	Asilidae	Efferia tabescens
Diptera	Asilidae	Leptopteromyia americana
Diptera	Asilidae	Ommatius gemma
Diptera	Asilidae	Psilonyx annulatus
Hemiptera	Belostomatidae	Belostoma flumineum
Hemiptera	Belostomatidae	Belostoma lutarium
Diptera	Bibionidae	Dilophus sayi
Diptera	Bibionidae	Plecia nearctica
Blattaria	Blattellidae	Ischnoptera bilunata
Psocoptera	Caeciliidae	Xanthocaecilius sommermanae
Diptera	Calliphoridae	Melanomya serva
Coleoptera	Cerambycidae	Curius dentatus
Coleoptera	Cerambycidae	Elaphidion mucronatum
Coleoptera	Cerambycidae	Leptostylopsis planidorsus
Coleoptera	Cerambycidae	Megacyllene decora
Coleoptera	Cerambycidae	Methia necydalea
Coleoptera	Cerambycidae	Methia pusilla
Coleoptera	Cerambycidae	Neoclytus acuminatus
Coleoptera	Cerambycidae	Prionus imbricornis
Coleoptera	Cerambycidae	Styloleptus biustus
Diptera	Ceratopogonidae	Alluaudomyia bella
Diptera	Ceratopogonidae	Atrichopogon fuscus
Diptera	Ceratopogonidae	Atrichopogon minutus
Diptera	Ceratopogonidae	Bezzia cf albidorsata
Diptera	Ceratopogonidae	Bezzia glabra
Diptera	Ceratopogonidae	Bezzia nobilis
Diptera	Ceratopogonidae	Bezzia solstitialis
Diptera	Ceratopogonidae	Clinohelea bimaculata
Diptera	Ceratopogonidae	Dasyhelea cincta
Diptera	Ceratopogonidae	Dasyhelea grisea
Diptera	Ceratopogonidae	Dasyhelea leptobranchia
Diptera	Ceratopogonidae	Dasyhelea mutabilis
Diptera	Ceratopogonidae	Downshelea stonei

Diptera	Ceratopogonidae	Echinohelea lanei
Diptera	Ceratopogonidae	Forcipomyia cf bystraki
Diptera	Ceratopogonidae	Forcipomyia colemani
Diptera	Ceratopogonidae	Forcipomyia fairfaxensis
Diptera	Ceratopogonidae	Forcipomyia glauca
Diptera	Ceratopogonidae	Forcipomyia leei
Diptera	Ceratopogonidae	Forcipomyia mcateeii
Diptera	Ceratopogonidae	Forcipomyia n sp
Diptera	Ceratopogonidae	Forcipomyia pluvialis
Diptera	Ceratopogonidae	Forcipomyia tenuichela
Diptera	Ceratopogonidae	Monohelea floridensis
Diptera	Ceratopogonidae	Palpomyia plebja
Diptera	Ceratopogonidae	Phaenobezzia sabroskyi
Diptera	Ceratopogonidae	Stilobezzia antennalis
Diptera	Ceratopogonidae	Stilobezzia bulla
Diptera	Ceratopogonidae	Stilobezzia pallidiventris
Diptera	Ceratopogonidae	Stilobezzia stonoi
Diptera	Ceratopogonidae	Stilobezzia sybleae
Homoptera	Cercopidae	Prosapia bicincta
Diptera	Chaoboridae	Chaoborus punctipennis
Diptera	Chironomidae	Ablabesmyia cf peleensis
Diptera	Chironomidae	Ablabesmyia rhamnophila
Diptera	Chironomidae	Antillocladius pluspilalus
Diptera	Chironomidae	Apedilum elachistum
Diptera	Chironomidae	Chironomus longipes
Diptera	Chironomidae	Demeijerea cf obrepta
Diptera	Chironomidae	Dicrotendipes lucifer
Diptera	Chironomidae	Dicrotendipes lucifer complex
Diptera	Chironomidae	Dicrotendipes modestus
Diptera	Chironomidae	Endochironomus nigricans
Diptera	Chironomidae	Goeldichironomus holoprasinus
Diptera	Chironomidae	Labrundinia pilosella
Diptera	Chironomidae	Larsia cf decolorata
Diptera	Chironomidae	Larsia sp AL-1
Diptera	Chironomidae	Limnophyes minimus
Diptera	Chironomidae	Lipurometriocnemus vixlobatus
Diptera	Chironomidae	Parachironomus carinatus
Diptera	Chironomidae	Parachironomus directus
Diptera	Chironomidae	Parachironomus sp
Diptera	Chironomidae	Parachironomus sublettei
Diptera	Chironomidae	Paraphaenocladus exagitans
Diptera	Chironomidae	Paratanytarsus dubius
Diptera	Chironomidae	Paratanytarsus quadratus
Diptera	Chironomidae	Paratanytarsus sp 3
Diptera	Chironomidae	Phaenopsectra flavipes
Diptera	Chironomidae	Polypedilum beckae
Diptera	Chironomidae	Polypedilum digitifer
Diptera	Chironomidae	Polypedilum halterale
Diptera	Chironomidae	Polypedilum illinoense
Diptera	Chironomidae	Polypedilum laetum
Diptera	Chironomidae	Polypedilum parvum

Diptera	Chironomidae	Polypedilum simulans
Diptera	Chironomidae	Polypedilum trigonus
Diptera	Chironomidae	Procladius sublettei
Diptera	Chironomidae	Pseudorthocladius cf macrovirgatus
Diptera	Chironomidae	Pseudosmittia sp 1
Diptera	Chironomidae	Pseudosmittia sp 2
Diptera	Chironomidae	Stenochironomus macateeii
Diptera	Chironomidae	Tanypus carinatus
Diptera	Chironomidae	Tanypus neopunctipennis
Diptera	Chironomidae	Tanytarsus cf allicis
Diptera	Chironomidae	Tanytarsus cf mendax
Diptera	Chironomidae	Tanytarsus limneticus
Diptera	Chironomidae	Tanytarsus sp 16
Diptera	Chironomidae	Zavreliella marmorata
Coleoptera	Chrysomelidae	Disonycha pensylvanica
Neuroptera	Chrysopidae	Ceraeochrysa lineaticornis
Neuroptera	Chrysopidae	Leucochrysa insularis
Neuroptera	Chrysopidae	Leucochrysa pavidata
Neuroptera	Chrysopidae	Nodita pavidata
Homoptera	Cicadellidae	Graphocephala coccinea
Homoptera	Cicadellidae	Graphocephala versuta
Homoptera	Cicadellidae	Jikrada olitorius
Homoptera	Cixiidae	Bothriocera maculata
Homoptera	Cixiidae	Pintalia delicata
Homoptera	Cixiidae	Pintalia vibex
Coleoptera	Cocconellidae	Psyllobora vigintimaculata
Odonata	Coenagrionidae	Enallagma divagans
Odonata	Coenagrionidae	Enallagma dubium
Odonata	Coenagrionidae	Enallagma signatum
Odonata	Coenagrionidae	Enallagma vesperum
Odonata	Coenagrionidae	Ischnura hasta
Odonata	Coenagrionidae	Ischnura kellicotti
Odonata	Coenagrionidae	Ischnura pollutum
Odonata	Coenagrionidae	Ischnura posita
Odonata	Coenagrionidae	Ischnura prognata
Odonata	Coenagrionidae	Ischnura ramburii
Diptera	Corethrellidae	Corethrella wirthi
Neuroptera	Corydalidae	Chauliodes rastricornis
Diptera	Culicidae	Aedes cinereus
Diptera	Culicidae	Aedes vexans
Diptera	Culicidae	Anopheles crucians complex
Diptera	Culicidae	Culex nigripalpus
Diptera	Culicidae	Culex territans
Diptera	Culicidae	Culiseta melanura
Diptera	Culicidae	Ochlerotatus infirmatus
Diptera	Culicidae	Ochlerotatus sollicitans
Coleoptera	Curculionidae	Apteromechus serratus
Psocoptera	Dasydemellidae	Teliapsocus conterminus
Homoptera	Delphacidae	Liburniella ornata
Diptera	Dolichopodidae	Amblypsilopus dorsalis
Diptera	Dolichopodidae	Campsicnemus hirtipes

Diptera	Dolichopodidae	Chrysotus annulatus
Diptera	Dolichopodidae	Chrysotus barbatus
Diptera	Dolichopodidae	Chrysotus crosbyi
Diptera	Dolichopodidae	Chrysotus furcatus
Diptera	Dolichopodidae	Chrysotus n sp
Diptera	Dolichopodidae	Chrysotus n sp A
Diptera	Dolichopodidae	Chrysotus picticornis
Diptera	Dolichopodidae	Chrysotus sp 1
Diptera	Dolichopodidae	Chrysotus sp 2
Diptera	Dolichopodidae	Condylostylus banksi
Diptera	Dolichopodidae	Condylostylus leonardi
Diptera	Dolichopodidae	Condylostylus viridicoxa
Diptera	Dolichopodidae	Diaphorus mundus
Diptera	Dolichopodidae	Dolichopus alacer
Diptera	Dolichopodidae	Gymnopternus brunneifacies
Diptera	Dolichopodidae	Gymnopternus currani
Diptera	Dolichopodidae	Gymnopternus lunifer
Diptera	Dolichopodidae	Gymnopternus n sp
Diptera	Dolichopodidae	Gymnopternus spectabilis
Diptera	Dolichopodidae	Gymnopternus tibialis
Diptera	Dolichopodidae	Gymnopternus vockerothi
Diptera	Dolichopodidae	Hercostomus vockerothi
Diptera	Dolichopodidae	Medetera aberrans
Diptera	Dolichopodidae	Medetera veles
Diptera	Dolichopodidae	Nematoproctus metallicus
Diptera	Dolichopodidae	Nematoproctus n sp
Diptera	Dolichopodidae	Pelastoneurus brevis
Diptera	Dolichopodidae	Pelastoneurus neglectus
Diptera	Dolichopodidae	Pelastoneurus proximus
Diptera	Dolichopodidae	Pelastoneurus vagans
Diptera	Dolichopodidae	Plagioneurus univittatus
Diptera	Dolichopodidae	Rhaphium dubium
Diptera	Dolichopodidae	Rhaphium exile
Diptera	Dolichopodidae	Rhaphium insolitum
Diptera	Dolichopodidae	Sympycnus lineatus
Diptera	Dolichopodidae	Thinophilus n sp
Diptera	Dolichopodidae	Thrypticus n sp
Diptera	Drosophilidae	Leucophenga varia
Diptera	Empididae	Chelipoda elongata
Diptera	Empididae	Syneches debilis
Diptera	Ephydriidae	Ceropsilopa coquilletti
Diptera	Ephydriidae	Discocerina obscurella
Diptera	Ephydriidae	Gastrops nebulosus
Diptera	Ephydriidae	Paralimna punctipennis
Diptera	Ephydriidae	Scatella stagnalis
Hymenoptera	Eumenidae	Eumenes fraternus
Homoptera	Flatidae	Metcalfa pruinosa
Hymenoptera	Formicidae	Aphaenogaster carolinensis
Hymenoptera	Formicidae	Aphaenogaster rudis complex
Hymenoptera	Formicidae	Camponotus americanus
Hymenoptera	Formicidae	Camponotus americanus

Hymenoptera	Formicidae	Camponotus castaneus
Hymenoptera	Formicidae	Crematogaster ashmeadi
Hymenoptera	Formicidae	Dorymyrmex bureni
Hymenoptera	Formicidae	Hypoponera opaciceps
Hymenoptera	Formicidae	Lasius flavus
Hymenoptera	Formicidae	Odontomachus brunneus
Hymenoptera	Formicidae	Odontomachus clarus
Hymenoptera	Formicidae	Odontomachus ruginodis
Hymenoptera	Formicidae	Paratrechina concinna
Hymenoptera	Formicidae	Pheidole dentata
Hymenoptera	Formicidae	Pheidole moerens
Hymenoptera	Formicidae	Prenolepis imparis
Hymenoptera	Formicidae	Solenopsis carolinensis
Hymenoptera	Formicidae	Solenopsis globularia
Hymenoptera	Formicidae	Solenopsis invicta
Hymenoptera	Formicidae	Solenopsis picta
Hymenoptera	Formicidae	Trachymyrmex septentrionalis
Odonata	Gomphidae	Arigomphus pallidus
Diptera	Heleomyzidae	Aecothea specus
Neuroptera	Hemerobiidae	Micromus posticus
Neuroptera	Hemerobiidae	Sympherobius amicus
Homoptera	Issidae	Thiona bullata
Trichoptera	Leptoceridae	Oecetis cinerascens
Trichoptera	Leptoceridae	Oecetis inconspicua
Trichoptera	Leptoceridae	Oecetis osteni
Odonata	Lestidae	Lestis vigilax
Odonata	Libellulidae	Celithemis fasciata
Odonata	Libellulidae	Erythemis simplicicollis
Odonata	Libellulidae	Miathyria marcella
Odonata	Libellulidae	Pachydiplax longipennis
Odonata	Libellulidae	Tetragoneuria cynosura
Odonata	Libellulidae	Tremea carolina
Coleoptera	Melandryidae	Eustrophinus bicolor
Diptera	Micropezidae	Taeniptera trivittata
Hemiptera	Miridae	Phytocoris neglectus
Hymenoptera	Mutillidae	Dasymutilla castor
Hymenoptera	Mutillidae	Dasymutilla lepeletierii
Hymenoptera	Mutillidae	Dasymutilla occidentalis
Hymenoptera	Mutillidae	Pseudomethoca simillima
Strepsiptera	Myrmecholacidae	Caenocholax fenyessi
Hemiptera	Naucoridae	Pelocoris femoratus
Hemiptera	Nepidae	Ranatra australis
Hemiptera	Nepidae	Ranatra buenoi
Hemiptera	Nepidae	Ranatra kirkaldyi
Hemiptera	Nepidae	Ranatra nigra
Lepidoptera	Noctuidae	Anticarsia gemmatalis
Lepidoptera	Noctuidae	Plathypena scabra
Lepidoptera	Nymphalidae	Calycopis cecrops
Lepidoptera	Nymphalidae	Hermeuptychia sosybius
Diptera	Odiniidae	Traginops irroratus
Hemiptera	Pentatomidae	Meneclis insertus

Diptera	Phoridae	Diplonevra hamata
Diptera	Phoridae	Dohniphora perplexa
Diptera	Phoridae	Phymatopterella ovatimacula
Hymenoptera	Pompilidae	Ceropales maculata
Hymenoptera	Pompilidae	Poecilopompilus interruptus
Diptera	Psychodidae	Clytocerus americanus
Diptera	Psychodidae	Paramormia ustulata
Diptera	Psychodidae	Parapanimerus sp
Diptera	Psychodidae	Pericoma wirthi
Diptera	Psychodidae	Psychoda cinerea
Diptera	Psychodidae	Psychoda minuta
Diptera	Psychodidae	Psychoda sp 1
Diptera	Psychodidae	Quateiella interdicta
Diptera	Psychodidae	Tinearia alternicola
Diptera	Psychodidae	Tinearia limicola
Diptera	Psychodidae	Trichomyia nuda
Diptera	Ptychopteridae	Bittacomorpha clavipes
Diptera	Rhagionidae	Chrysopilus rotundipennis
Diptera	Rhinophoridae	Bezzimyia americana
Hemiptera	Rhyparochromidae	Heraeus plebejus
Diptera	Sarcophagidae	Ravinia stimulans
Coleoptera	Scarabaeidae	Dyscinetus morator
Diptera	Sciomyzidae	Atrichomelina pubera
Diptera	Sciomyzidae	Dictya pictipes
Diptera	Sciomyzidae	Dictya stricta
Diptera	Sciomyzidae	Limnia loewi
Hymenoptera	Sphecidae	Eremnophila aureonotata
Hymenoptera	Sphecidae	Sphecius speciosus
Diptera	Stratiomyidae	Ptectucus sackenii
Diptera	Stratiomyidae	Ptectucus trivittatus
Diptera	Syrphidae	Ocyptamus fuscipennis
Diptera	Syrphidae	Toxomerus geminatus
Diptera	Tabanidae	Chlorotabanus crespuscularis
Diptera	Tabanidae	Chrysops dixianus
Diptera	Tabanidae	Tabanus petiolatus
Diptera	Tachinidae	Anisia gilvipes
Diptera	Tachinidae	Genea pavonacea
Diptera	Tachinidae	Houghia setineuris
Diptera	Tachinidae	Myiopharus ancillus
Diptera	Tachinidae	Ormia dominicana
Diptera	Tachinidae	Oswaldia minor
Diptera	Tachinidae	Paradidyma affinis
Diptera	Tachinidae	Paradidyma petiolata
Diptera	Tachinidae	Paradidyma singularis
Diptera	Tachinidae	Prospheya pulvereana
Diptera	Tachinidae	Spathidexia clemonsi
Diptera	Tipulidae	Atarba picticornis
Diptera	Tipulidae	Brachypremna dispellens
Diptera	Tipulidae	Dolichozepe subalbipes
Diptera	Tipulidae	Epiphragma solatrix
Diptera	Tipulidae	Erioptera caloptera

Diptera	Tipulidae	<i>Erioptera cana</i>
Diptera	Tipulidae	<i>Erioptera needhami</i>
Diptera	Tipulidae	<i>Erioptera parva</i>
Diptera	Tipulidae	<i>Erioptera septemtrionis</i>
Diptera	Tipulidae	<i>Erioptera vespertina</i>
Diptera	Tipulidae	<i>Gonomyia pleuralis</i>
Diptera	Tipulidae	<i>Limnophila macrocera</i>
Diptera	Tipulidae	<i>Limonia bryanti</i>
Diptera	Tipulidae	<i>Limonia communis</i>
Diptera	Tipulidae	<i>Limonia divisa</i>
Diptera	Tipulidae	<i>Limonia domestica</i>
Diptera	Tipulidae	<i>Limonia globithorax</i>
Diptera	Tipulidae	<i>Limonia rostrata</i>
Diptera	Tipulidae	<i>Limonia shannoni</i>
Diptera	Tipulidae	<i>Nephrotoma ferruginea</i>
Diptera	Tipulidae	<i>Nephrotoma virescens</i>
Diptera	Tipulidae	<i>Pilaria imbecilla</i>
Diptera	Tipulidae	<i>Pilaria recondite</i>
Diptera	Tipulidae	<i>Polymera georgiae</i>
Diptera	Tipulidae	<i>Pseudolimnophila luteipennis</i>
Diptera	Tipulidae	<i>Teucholabis complexa</i>
Diptera	Tipulidae	<i>Teucholabis immaculata</i>
Diptera	Tipulidae	<i>Tipula sayi</i>
Diptera	Tipulidae	<i>Tipula furca</i>
Diptera	Tipulidae	<i>Tipula sayi</i>
Diptera	Tipulidae	<i>Toxorhina magna</i>
Homoptera	Tropiduchidae	<i>Pelitropis rotulata</i>
Hymenoptera	Vespidae	<i>Dolichovespula maculata</i>
Hymenoptera	Vespidae	<i>Mischocyttarus cf cubensis</i>

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