VECTOR SURVEILLANCE IN NEW JERSEY

EEE, WNV, SLE, LAC, DENV, CHIK, ZIKV, and JCV

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29 August to 4 September, 2021, CDC Week 35
Data download 2:20 am 4 September

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NOTE: County/species tables for arboviruses are now in a supplemental file here

Arbovirus Summary

- **Currently, there are 603 positive WNV pools, (568 pools of *Culex* Mix, *Cx. pipiens* or *Cx. restuans*, 4 pools of *Cs melanura*, 19 pools of *Ae albopictus*, 3 pools of *Ae. triseriatus* and *Ae. japonicus* each, and one pool each of *Ae. trivittatus*, *Ae. vexans*, *An. bradleyi*, *An. quadrimaculatus*, and 2 pools of *Coquillettidia perturbans*). Four positive birds (1 *Corvus brachyrhynchos*,3 *Accipiter cooperii*). There has been one fatal human case of WNV from Camden County and 4 probable human cases pne each from Bergen, Essex, Gloucester, and Union counties).**
- **There are 15 positive EEE pools, 11 detected in *Cs. melanura*, and one each in *Culex erraticus*, *Cx.* Mix, *Ae. taeniorhynchus*, and *Ae. triseriatus*. There has been one EEE horse case in Cumberland County.**
- **There are four positive JCV pool, first detected in *Aedes vexans*, from Sussex County, collected 8 July. The latest positive pools were detected in *Anopheles* spp., *Anopheles punctipennis*, and *Culex* Mix. There is one human case of Jamestown Canyon virus, in Sussex County. Date of onset was May 8.**

- **In 2020, there were 13 positive EEE pools in *Culiseta melanura*.**
- **There were 241 positive WNV pools, in *Culex* Mix (231), in *Culex pipiens* (4), *Culex restuans* (1), *Culiseta melanura (2)*, *Aedes albopictus* (2), and *Aedes canadensis canadensis (1)*.**
- **There were 6 positive JVC pools in *Aedes cantator* (2), *Aedes taeniorhynchus* (1), *Anopheles quadrimaculatus* (1) and *Coquillettidia perturbans* (2).**
- **There was one EEE horse case reported. There are no WNV horse cases.**
- **There were 3 human WNV cases; in Essex County (1) and Monmouth County (2).**
- **There was one WNV positive Red-tailed Hawk (*Buteo jamaicensis*) in Cumberland County (regular surveillance of birds is no longer done in NJ).**

- **Note: Data downloads times are noted and do not necessarily reflect all pools submitted and analyzed to that point in time. This report may vary from other reports from the same dataset as they are all snapshots in time.**

Culiseta melanura and Eastern Equine Encephalitis

SITE/Boxes	Inland or Coastal	Historic Population Mean	Current Weekly Mean	Total Tested* (Collected)	Total Pools Tested* (Submitted)	EEE Isolation Pools	MFIR
Bass River (Burlington Co.)/5	**Coastal**	0.32	0.00	1	1		
Green Bank (Burlington Co.)/25	**Coastal**	2.84	0.16	25	6		
Corbin City (Atlantic Co.)/25	**Coastal**	1.49	1.64	298	13		
Dennisville (Cape May Co.)/50	**Coastal**	7.80	0.02	99	12	2	20.202
Winslow (Camden Co.)/50	**Inland**	1.84	1.34	309	12	2	6.472
Centerton (Salem Co.)/50	**Inland**	3.33	1.12	223	15		
Turkey Swamp (Monmouth Co.)/50	**Inland**	1.80	0.26	88	9		
Glassboro (Gloucester Co.)/50	**Inland**	0.28	0.00	110	7		

*Current week (in parentheses) results pending. ‡ corrected from previous week NC=No Collection ND=No Data (site offline) NR=Not Recorded a=pool tested

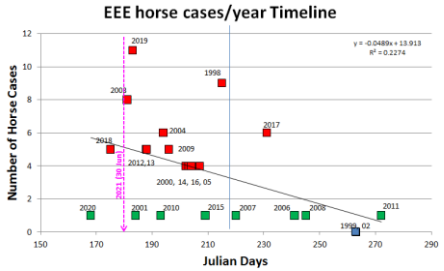
Remarks: Currently, 15 positive EEE pools (11 in *Cs. melanura,* 1 each in *Culex erraticus, Cx.* Mix, *Aedes taeniorhynchus, Ae. triseriatus*) have been detected. First detected pool of *Cs. melanura* was from a county-run site in Gloucester, sampled 30 June. Latest increase included 3 additional species beyond *Cs. melanura*, indicating a spread to potential bridge vectors. Current weekly mean is for Week 34.

Statewide: 8194 *Cs. melanura* from 461 pools have been tested, with 11 positive pools detected and an overall *Cs. melanura* MFIR of 1.342. 138,389 specimens in 4557 pools from 35 other species have also been tested with four positive pools detected, one each in *Culex erraticus* (first non-*melanura* detection), and then in in this past week *Aedes taeniorhynchus, Ae. triseriatus* and *Culex* Mix. Overall MFIR for all species statewide is 0.102.

Traditional Resting Box Sites: 1153 *Cs. melanura* from 75 pools have been tested, with four positive pools detected, two at Winslow in Camden County and 2 at Dennisville, Cape May County. Overall *Cs. melanura* MFIR at the traditional resting box site is 3.469.

	Additional *Cs. melanura* trapped by counties *traps with positives indicated in **BOLD UNDERLINED.**				
County	**Trap types***	**Pools**	**Mosquitoes**	**Positives**	**MFIR**
Atlantic	CO2, RB	56	1580	4	2.532
Bergen	NJLT, RB	9	164		
Burlington	ULVT	46	1775		
Camden	GRA	1	2		
Cape May	GRA, RB	34	440		
Cumberland	CO2, GRA, RB	35	279		
Gloucester	RB	81	2270	3	1.322
Middlesex	NJLT	5	16		
Monmouth	Other	3	6		
Morris	CO2, RB	23	65		
Ocean	CO2	14	31		
Salem	CO2, GRA, RB	29	150		
Sussex	CO2, GRA, RB	49	247		
Warren	Co2	1	16		
TOTAL		**386**	**7041**	**7**	**0.994**

Additional County-set *Cs. melanura*: Counties maintain trap sites for *Cs. melanura* in other areas, using a variety of traps. First positive pools of *Cs. melanura* have been detected at a non- traditional resting box site in Gloucester County, collected 30Jun. The two latest positive pools came each from Atlantic and Gloucester counties for a total of 7 positive pools from county-set sites.



Graph above indicate start times to detection of EEE in *Culiseta melanura* and associated number of horse cases from 1998 to 2020.

Horses and Humans: Last year, only 1 horse was reported with EEE, detected in September. ***Horse owners are urged to make sure their horses are up to date on their vaccinations. Horse cases are known to occur through October and sometimes into November (see link below).*** Other sensitive species are non-native birds, such as Ostriches/Emus and Gallinaceous birds such as pheasants of Eurasian origins.

Case	Animal	Age	Sex	County	Date of Onset	Euthanized?	Vaccinated?	Comment
1	horse	7	f	Cumb.	Unk.	Aug 19	no	https://jerseyfresh.nj.gov/agriculture/news/press/2021/approved/press210824.html

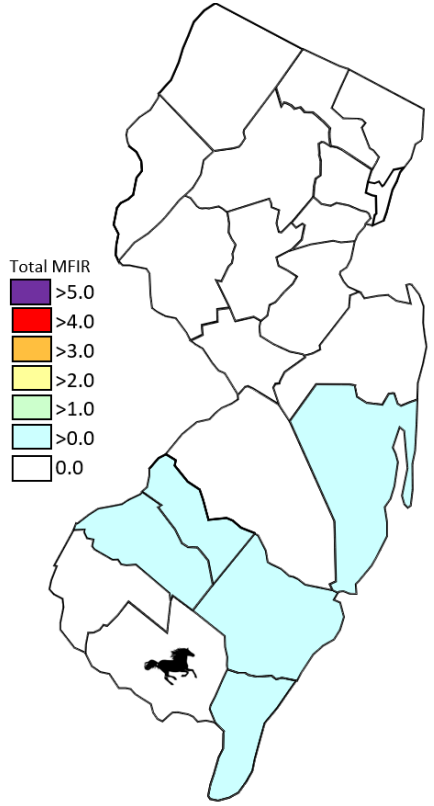
Horses and Vaccinations: The fate of unvaccinated equids reinforces the necessity of maintaining a vaccination schedule for arboviruses. For vaccination schedules recommended by the American Association of Equine Practices, see: http://www.aaep.org/vaccination_guidelines.htm

There are no human cases of EEE currently reported. For more information, see DOH Vectorborne Surveillance reports: https://www.nj.gov/health/cd/statistics/arboviral-stats/

Species other than *Cs. melanura*	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	14	118		
Aedes albopictus	313	2783		
Aedes atlanticus	9	221		
Aedes aurifer	5	102		
Aedes canadensis canadensis	78	1154		
Aedes cantator	41	565		
Aedes cinereus	3	80		
Aedes grossbecki	9	33		
Aedes japonicus	216	1231		
Aedes mitchellae	1	1		
Aedes sollicitans	16	318		
Aedes sticticus	15	261		
Aedes stimulans	5	28		
Aedes taeniorhynchus	28	1240	1	0.806
Aedes thibaulti	2	105		
Aedes triseriatus	44	89	1	11.236
Aedes trivittatus	21	314		
Aedes vexans	98	2463		
Anopheles spp.	10	221		
Anopheles bradleyi	23	583		
Anopheles crucians	16	225		
Anopheles punctipennis	183	2887		
Anopheles quadrimaculatus	69	1023		
Anopheles walkeri	12	873		
Coquillettidia perturbans	196	6413		
Culex erraticus	83	1064	1	0.940
Culex Mix	2530	100084	1	0.010
Culex pipiens	298	9853		
Culex restuans	89	1819		
Culex salinarius	50	744		
Culex territans	1	1		
Culiseta inornata	17	242		
Culiseta morsitans	4	8		
Orthopodomyia signifera	3	4		
Psorophora ciliata	7	106		
Psorophora columbiae	24	662		
Psorophora ferox	24	471		
State Total	**4557**	**138389**	**4**	**0.029**

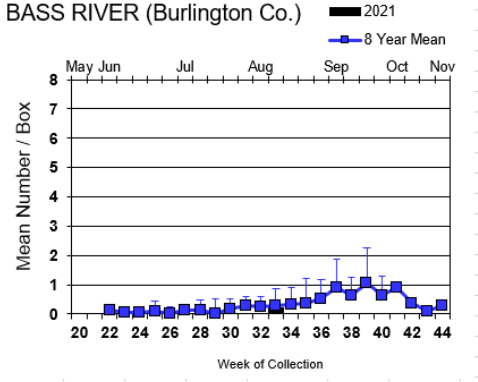
Additional Species: 35 additional species were tested for EEE. One positive pool of *Culex erraticus,* a known endemic vector that may also act as a bridge vector, was detected in Atlantic County on 5 Aug. The latest positive pools were detected each in *Aedes taeniorhynvhus* (Ocean County), *Ae. triseriatus* (Gloucester County), and *Culex* Mix (Atlantic County).

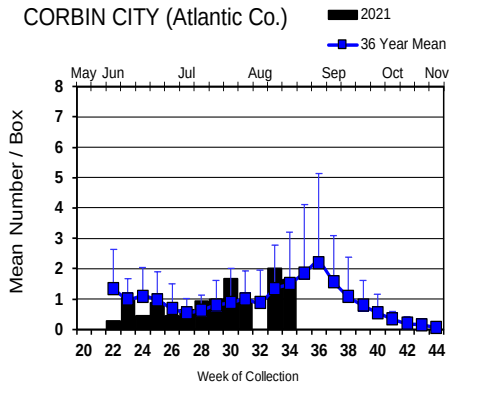
Overall MFIR rates, human and animal cases per county:

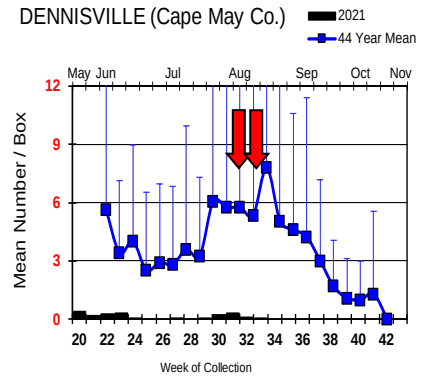


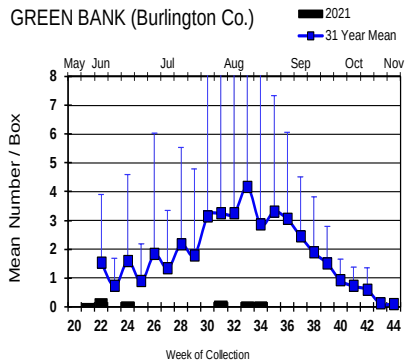
Culiseta melanura Populations

Coastal

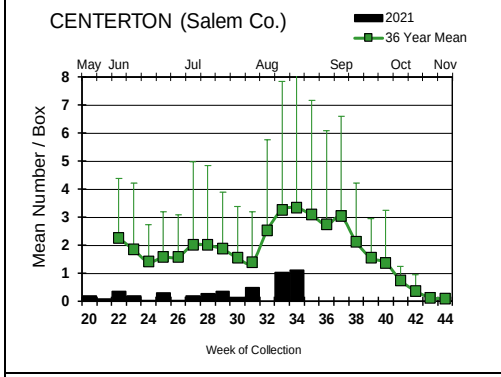


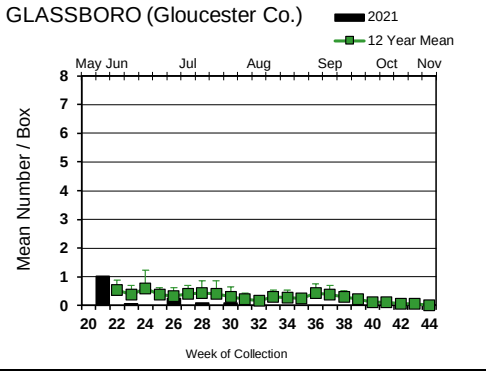


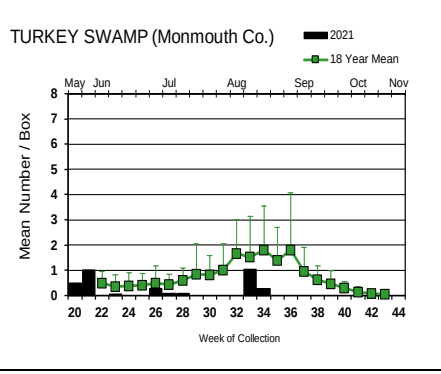


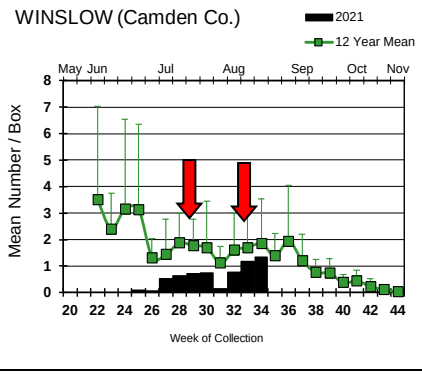


Inland









This year's surveillance season began two weeks earlier to accommodate increasing indications of earlier population emergences. Four positive pools have been detected, two at Dennisville, and two at Winslow. The first seasonal positive pool on the state had been detected at Winslow. Adult mosquito surveillance reports at http://vectorbio.rutgers.edu/reports/mosquito/ continue to suggest resting box collections are lower than light box collections.

= Positive pool(s) detected (red = melanura, purple = other species).

EEE in US (2021 cumulative cases): (Black or Red = previous + new reported cases occurring)

- **equine:** 1(AZ) **15**(FL) 1(NJ) 1(WI) 1(Ontario)
- **mosquito pools:** **15**(NJ)
- **sentinel:** **168**(FL)
- **human:**

West Nile Virus Positive Organisms in US, 2021

West Nile in US (2021 cumulative cases): Single black values indicate no change from previous week. Black values / red values equals previous week/New totals.
Note: Data reported by all states should be considered provisional and subject to change. Sources for this table can be found here.

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Alabama					4/5
Alaska					
Arizona		62/118	12		22/29
Arkansas					1
California	155/160	1482/1646	43/45	4/6	26/32
Colorado		97/200		1	12/29
Connecticut		60/81			
Delaware					
Florida		1	19/41		
Georgia					1
Hawaii					
Idaho		23		1	2
Illinois	12/18	1600/1921	0	0	2
Indiana	0	28/75		0	0
Iowa					2
Kansas					1
Kentucky					
Louisiana					3
Maine					
Maryland(+DC)					1
Mass.		68/98			4
Michigan				1	
Minnesota					
Mississippi		16		2	
Missouri					1

	Birds	Mosquito Pools	Sentinels	Horses*	Humans
Montana					
Nebraska	0	6		0	1/4
Nevada					
New Hampshire					
New Jersey	4	445/603		0	1/5
New Mexico					
New York					3
North Carolina					
North Dakota	1	16		2	1/5
Ohio		160			1
Oklahoma				1	
Oregon	0	0	0	0	0
Pennsylvania	0	76	0	0	1
Rhode Island					
South Carolina				1	2
South Dakota					4
Tennessee					2
Texas	8/10	703/832	1	0	5/9
Utah					1
Vermont					
Virginia					
Washington		44/46		5	1
West Virginia					
Wisconsin					
Wyoming					

* Can include other species (e.g., dogs, cows) reported positive.

Protocol: New Jersey Department of Health (NJDH Public Health Environmental and Agricultural Laboratories, PHEAL) and the Cape May County Department of Mosquito Control tests mosquito pools using RT-PCR Taqman techniques.

Mosquito Species Submitted and Tested for West Nile Virus through 4 September 2021

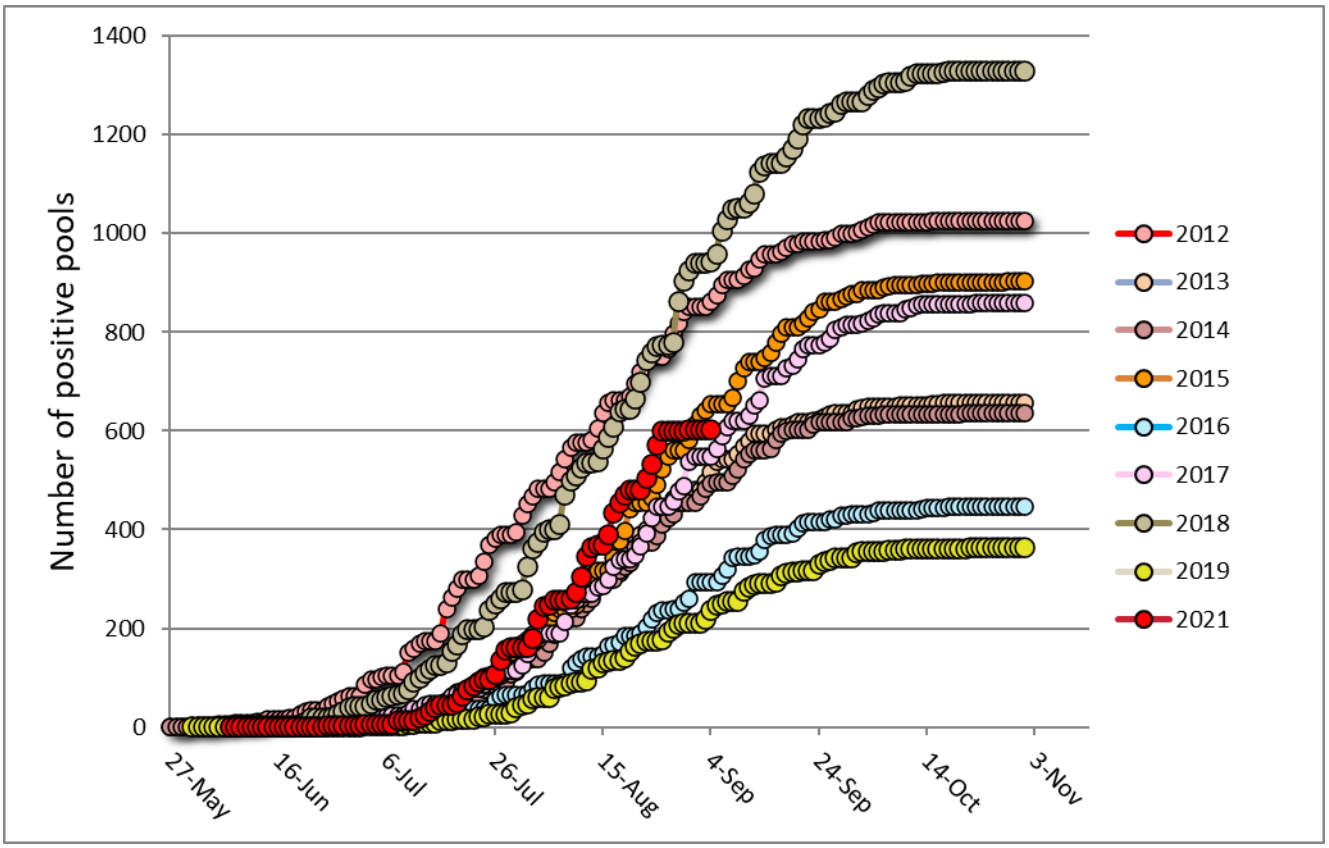
Species	Pools	Mosquitoes	Positives	MFIR
Aedes abserratus	15	120		
Aedes albopictus	366	3243	19	5.859
Aedes atlanticus	10	230		
Aedes aurifer	5	102		
Aedes canadensis canadensis	88	1274		
Aedes cantator	47	722		
Aedes cinereus	3	80		
Aedes grossbecki	9	33		
Aedes japonicus	261	1816	3	1.652
Aedes mitchellae	1	1		
Aedes sollicitans	19	448		
Aedes sticticus	15	261		
Aedes stimulans	5	28		
Aedes taeniorhynchus	36	1468		
Aedes thibaulti	2	105		
Aedes triseriatus	86	255	3	11.765
Aedes trivittatus	27	330	1	3.030
Aedes vexans	111	2720	1	0.368
Anopheles spp.	12	290		
Anopheles bradleyi	25	708	1	1.412
Anopheles crucians	20	261		
Anopheles punctipennis	212	3413		
Anopheles quadrimaculatus	79	1154	1	0.867
Anopheles walkeri	13	898		
Coquillettidia perturbans	196	6413	2	0.312
Culex erraticus	83	1064		
Culex spp.	3019	122505	558	4.555
Culex pipiens	363	11757	9	0.766
Culex restuans	96	1876	1	0.533
Culex salinarius	61	1085		
Culex territans	1	1		
Culiseta inornata	18	244		
Culiseta melanura	461	8194	4	0.488
Culiseta morsitans	4	8		
Orthopodomyia signifera	3	4		
Psorophora ciliata	8	115		
Psorophora columbiae	29	773		
Psorophora ferox	35	647		
Psorophora howardii	1	50		
Grand Total	**5845**	**174696**	**603**	**3.452**

Remarks: To date 5845 pools of 174,696 mosquitoes from 36 species have been tested. 603 pools (568 pools of Culex Mix, *Cx. pipiens or Cx. restuans,* 4 pools of *Cs melanura,* 19 pools of *Ae albopictus,* 3 pools of *Ae. triseriatus* and *Ae. japonicus each,* and one pool each of *Ae. trivittatus, Ae. vexans, An. bradleyi, An. quadrimaculatus, and 2 pools of*

Coquillettidia perturbans) have been identified as positive for WNV in all but Salem County. First positive detected in a pool of *Culex* Mix collected on 7 June in Somerset County. Cumulative MFIR for all mosquitoes in New Jersey is 3.452.

Humans, Horses and Wild Birds: No horses have been reported infected with WNV in 2021. Five human cases (one fatality from Camden County, four probable cases one each in Bergen, Essex, Gloucester, and Union counties) has been reported to date. See DOH reports on arbovirus activity for further information: https://www.nj.gov/health/cd/statistics/arboviral-stats/index.shtml

Although birds are no longer routinely tested in New Jersey, one American Crow (*Corvus brachyrhynchos*) from Burlington County has tested positive for WNV. Three Cooper's Hawks (*Accipiter cooperii*) tested positive from Union County.



Above is a graph showing cumulative number of positive pools for the previous 9 years, inclusive of the most active (2018) year. 2021 is represented in RED, with first positive showing on 7 June.

Go here for the table supplement of arbovirus by county by mosquito species.