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News Letter MIZO-ENVIS

State of Environment and Its Related Issues in Mizoram

Volume 16 No. 2 July - September 2021

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↑ World Ozone Day 2021 - Online Drawing Competition - First Prize ↑

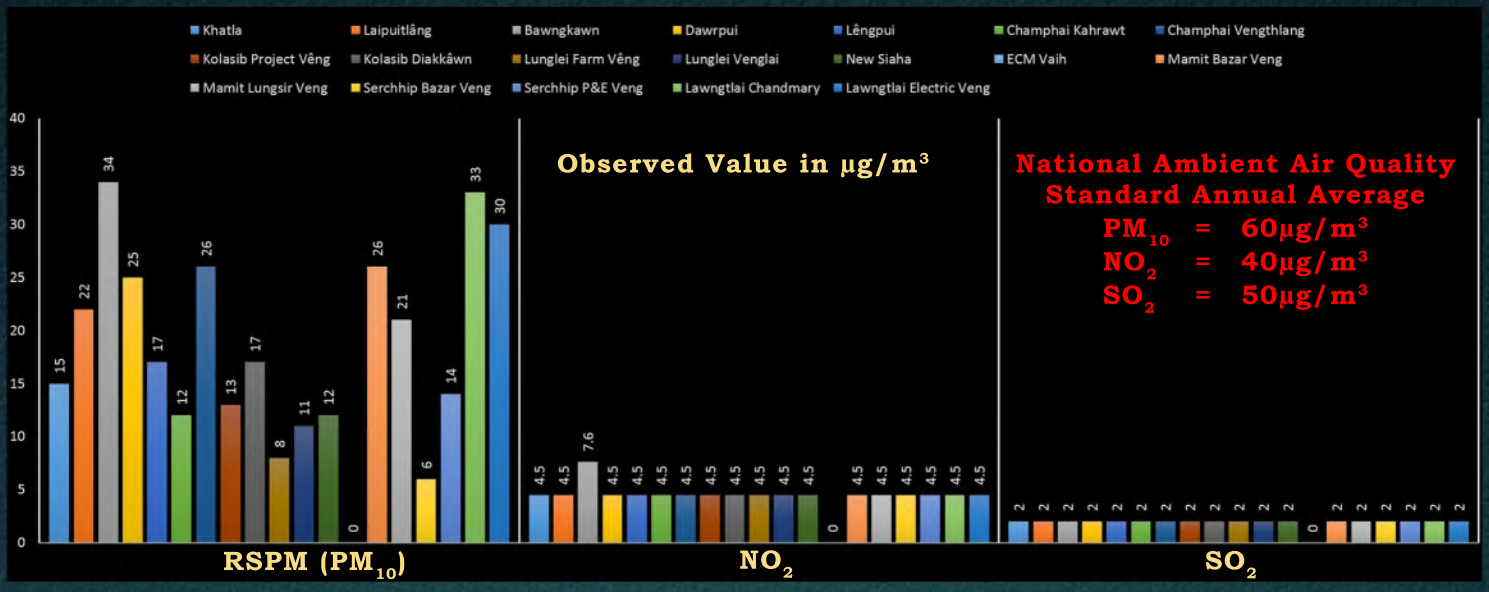
↑ Second Prize ↑

↑ Third Prize ↑

Red-eared Slider

AMBIENT AIR QUALITY DATA OF MIZORAM

July 2021



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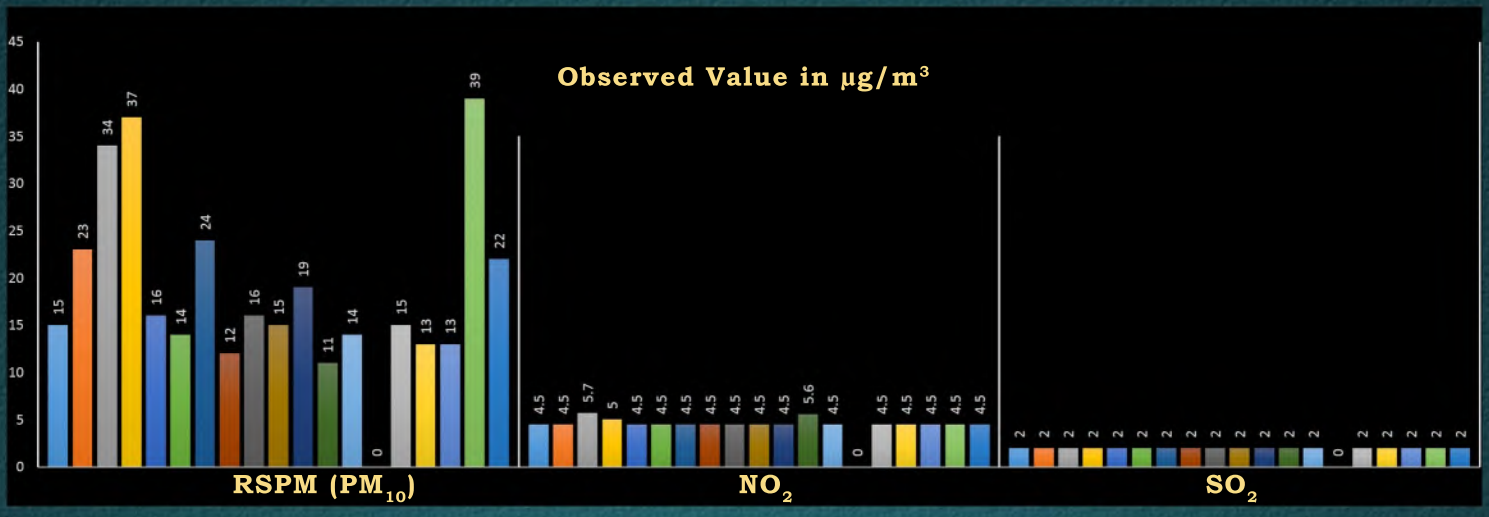
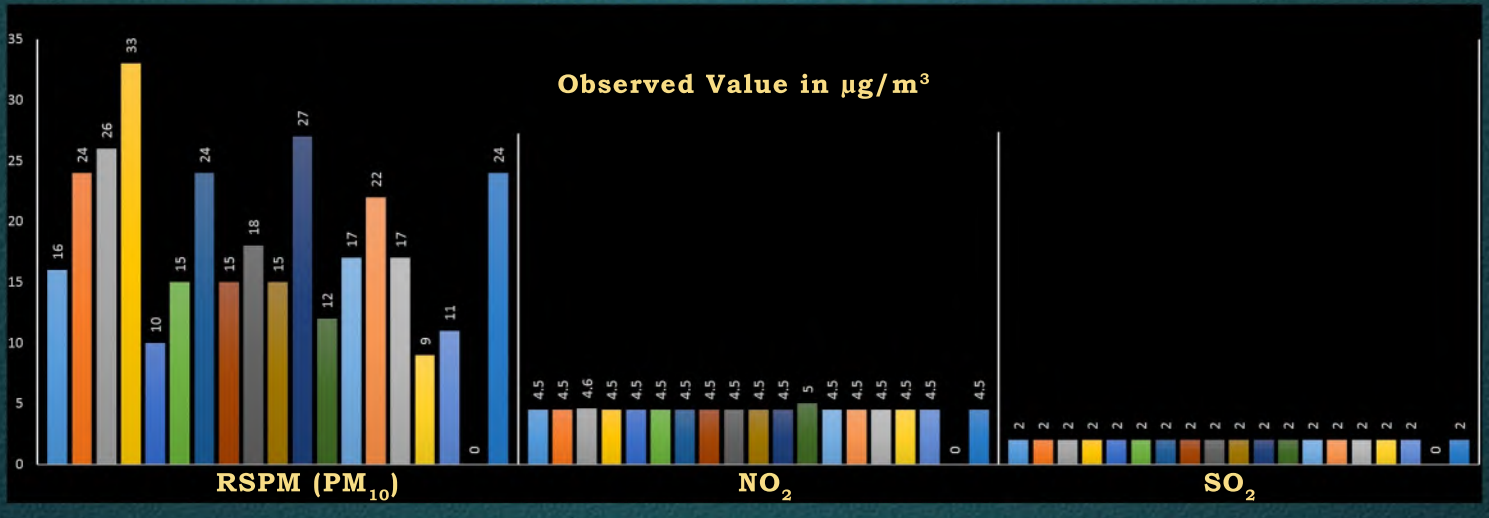


September 2021



Source: Mizoram Pollution Control Board (MPCB)

INVASIVE AND ALIEN SPECIES OF TESTUDINES, *Trachemys scripta elegans (Red-eared Slider)* A POTENTIAL THREAT TO NATIVE SPECIES OF MIZORAM

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Introduction

Trachemys scripta elegans is a freshwater turtle belonging to the family Emydidae of order Testudines, native to United States and Northern Mexico (Powell et al. 2016). The name Red-eared Slider comes from the red stripe behind its eye, and its habit of sliding off rocks or logs into the water when frightened. Till date, they are extremely popular pets due to their small size, easy maintenance, and relatively low cost (Teillac-Deschamps et al.2008). Consequently, they are the most widely introduced turtle (Ramsay et al. 2007) with populations established on every continent except Antarctica (Kraus 2009) and listed among the world's 100 worst invasive alien species (Lowe et al. 2000). The introduction of Red-eared Slider, *Trachemys scripta elegans* in Mizoram, Northeast India from the past five years is expected to be highly detrimental to populations of native species. Currently, juvenile individuals are available in aquarium and ornamental fish shop for around 500 to 600 rupees in Aizawl and many other districts like Lunglei, etc. As per observation (pers. com.), the seller got it through pet-trade from Southeast Asian countries like Thailand, Vietnam and Malaysia. At present, people keep it as pet without appropriate knowledge of the species.

Biology of Red-eared Slider

Red-eared Slider is polygynandrous and can attain 10-29 cm in length; exhibit sexual dimorphism where female tends to be larger than male. Males exhibit blunt, bigger and longer tail as compare to females, and cloacal opening close to the tip of the tail. The animal can survive up to 30 years in wild and up to 41 years in captivity. The colour of the carapace ranges from greenish yellow to grey, brown, and black with large yellow lines. The plastron appears to be lighter in colour than the carapace, usually yellow with black spots or streaks. Older males exhibit melanism that is the darkening of both carapace and plastron, often completely black in colour. The species have webbed feet to thrive in aquatic habitat with five digits; both male and female exhibit foreclaws for courtship purposed. They are oviparous and breeding season starts from April and can last till late October. Their clutch size ranges from 10-30 and are capable of breeding 4-6 times a year. Incubation period range from 69-95 days and the sex of the hatchlings is temperature-dependent. Eggs that are incubated below 28.6 °C develop as males and above 29.6 °C as females, whereas eggs that are incubated between 28.6 °C and 29.6 °C will have high proportion of female hatchlings as compared to male. The animals are diurnal and spend a substantial amount of time basking in the sun on rocks, logs and

banks. They are omnivores and can feed on anything that is available; diet mostly consist of insects, molluscs, crustaceans, fish, small amphibians, and other reptiles sometimes consume the flesh of dead animals.

How Red-eared Slider is Invasive?

The species, *Trachemys scripta elegans* when introduced to new or non-native ecosystems, possibly will not have any natural predators or controls, and as of their high fecundity rate, they can breed and proliferate quickly, taking over large area. Due to their active and aggressive in nature, they might provide little to no food for indigenous animals and can alter the abundance or diversity of important species. Also, native species may not have evolved defences against the invader, or may not be able to compete with a species that has no predators. In addition, exotic species will be outcompeting native species for food or other resources; causing or carrying disease like *Salmonella enterica* (Nagano et al., 2006; Pendelbury, 2010), preventing native species from proliferation by competing for breeding and basking site, and furthermore might increase inter-specific competition. The alien species can change the food web in native ecosystem by destroying or replacing native food sources, and will be able to exploit a resource that native species cannot use, which allows them to take hold in the new environment.

Status of Red-eared Slider in Mizoram

To date, *Trachemys scripta elegans* are listed as a species of least concern on IUCN Red List and do not have any special status on Indian Wildlife Protection Act, 1972. Hmar et al. (2021)

reported adult female individual from unnamed stream of Chawlhhmun, Aizawl. From this report, there is a possibility of wild population in the state, mainly due to unknowingly releasing of the species in natural water bodies or wild by people after they outgrow an aquarium, tank or pool at home. So, with reference to the species and how it can adversely affect the native population and biodiversity, proper awareness about exotic species, needs for the conservation of indigenous species, strict laws regulating pet-trade, and introduction of invasive species in the state is urgently required.

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LOCAL ENVIRONMENTAL NEWS

Apple Snails from Mizoram, newest of freshwater snails

Staff Reporter - Aizawl, July 2:

In July 2017: Aravind N.A. and his team from the Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore, set out to study the land snails in the Blue Mountain National Park of Mizoram. On their way back, they explored a small waterfall near the National Highway for freshwater snails and luckily stumbled upon a species new to science. Named Pila mizoramensis, it is the sixth member of the Pila genus from India and the second species to inhabit hill streams. Pila is commonly known as Apple Snails.

"It is currently found in only two localities in Mizoram. The 'type locality' or the place from where the first individual was collected is already facing threats due to garbage dumping and other human disturbances such as washing of vehicles near the falls," explains Dr. Aravind N.A, corresponding author of the paper recently published in Molluscan Research. He is an Associate Professor at Suri Sehgal Center for Biodiversity and Conservation, ATREE.

The team carried out morphological, anatomical and phylogenetic studies to describe the species. "We first look at the shell characteristics – whether left or right coiled. Pila Mizoramensis was right coiled. DNA studies showed that it was a close relative of the Southeast Asian species, Pila virescens," adds first author Maiterya Sil, Research Associate with ATREE. The study was done in collaboration with Indian Institute of Science, Bangalore and Indian Institute of Scientific Education and Research, Thiruvananthapuram.

The snail was found among algae and semi- aquatic plants in the spray or splash zones of the waterfalls. The snail, given the common name Mizoram Apple Snail, has a shell height and diameter of about 2.5cm. Its habitat has perennial waterfalls and the snail was found among algae and semi-aquatic plants in the spray or splash zones of the waterfalls. The locality it was found in has a temperature not exceeding in 25 degrees Celsius and receives an annual rainfall of over 2500mm.

There are only two species of Pila from India which are restricted to streams and the other one Pila saxea is found in northern Western Ghats. Other members of this group are restricted to stagnant water bodies such as paddy fields, ponds, marshes and lakes.

When asked if these snails are edible, Dr. Aravind N.A explained that ost species in this genus are edible. "But the new snails are extremely small in size and not found in large numbers like those on agricultural fields. It will a tough job collecting enough to make a meal," he chuckles.

The team has planned to carry out further studies to understand the extend of this snail's distribution in the Northeast Indian region, reproductive biology, ecology and response to habitat disturbances.

(Source: Newslink Vol. XXIII Issue No. 139, Aizawl, July 3, Saturday 2021)

A new snake species gets named after local warrior Vanhnuailiana

Agencies - Aizawl, July 6:

It was a bright summer morning in March and researchers from Mizoram University were surveying for herpetofaunal (reptiles and amphibians) species in villages not far from the capital city Aizawl. Though night fell, they continued their survey and spotted a snake on a boulder in a dried-up area of Tuinghaleng river bed. Further detailed studies revealed that it was a new species of the Stoliczkia genus and only the third species of Stoliczkia from India. The snake is about 50cm in length, non-venomous, and has a dark brown shade above with a few dorsal scale rows bright yellow in colour. Though the head scales are uniformly dark brown it has bright pinkish sutures.

The team named it Stoliczkiavanhnuailiana, in honour of Vanhnuailiana, a famous Mizo warrior. He was one of the most powerful chiefs of the Lushai Hills (now Mizoram) during the mid1800s and led many successful campaigns against rival chiefs in the area. "Since some members of the family Xenodermidae exhibit fluorescence under ultraviolet light, we tested this species under a UV light, but it did not exhibit any significant sign of fluorescence. We do not know if the pink colour played an important role as of now," explains lead author Samuel Lalronunga, from the Systematics and Toxicology Laboratory, Department of Zoology, Mizoram University. The findings were published that day in Zootaxa.

The team gave a common name, 'Lushai hills dragon snake' and in the local Mizo language they suggest it be called rulphusin, meaning 'snake with small scales'.

The team says this is one of the most important discoveries of this century because the last time its sister species Stoliczkiakhasiensis was found was more than a century ago in 1904. "S. khasiensis is arguably one of the rarest snakes of India. Our knowledge of this lost species was based only on two historical museum specimens. Whereabouts of S. khasiensis still remain one of the greatest mysteries from Northeast India. The discovery of this new sister species from Mizoram tells us a lot about their uniqueness, beauty and the microhabitat they may occupy," says Abhijit Das, one of the authors from Wildlife Institute of India, Dehradun.

The new species is known only from a single specimen at a point locality and further studies are needed to know its distributional range, ecological preferences and tolerances. "At the site where the individual was encountered, there is small-scale agricultural and pisciculture practice by the local communities. Numerous patches of forests are cleared for shifting cultivation which could be a threat if this species is a narrowly distributed habitat specialist," adds Dr. Lalronunga.

(Source: The Mizoram Post Vol. 19 Issue No. 41, Aizawl, Wednesday, 07 July http://www.themizorampost.net/page-view?date=07-07-2021&page_no=1)

REPORT ON OBSERVANCE OF WORLD OZONE DAY, 2021

(Mizoram ENVIS Hub)

In 1994, September 16 was designated as International day for Preservation of the Ozone Layer *(World Ozone Day)* by the United Nations General Assembly, commemorating the date of signing of the Montreal Protocol on Substances that Deplete the Ozone Layer way back in 1987. The Day is celebrated to spread awareness about the depletion of the Ozone Layer and search for possible solutions of healing it among the public.

The theme for World Ozone Day, 2021 is **Montreal Protocol – keeping us, our food and vaccines cool**, which seeks to highlight the significance of Montreal Protocol in slowing climate change and helping to boost energy efficiency in the cooling sector, that contributes to food security besides phasing out ozone-depleting substances.

Report on observance of World Ozone Day, 2021by Mizoram ENVIS Hub and different Eco-Club Schools and Colleges within the State is highlighted as below:-

I. MIZORAM ENVIS HUB

Mizoram ENVIS Hub teamed up with Mizoram Pollution Control Board *(MPCB)*, the State Nodal Agency for National Green Corps *(NGC)*-Eco Club in carrying out several activities towards protection of the ozone layer among the students and the general public.

Brief highlights on activities taken up is as under:

i. Publication of E-poster

Poster with a request to the public for using ozone-friendly products in striving towards protection of the ozone layer was prepared and published in electronic version. Dissemination of the e-poster to the public was met through social media as the Hub's website, facebook page and whatsapp.

ii. Publication of E-flyer

On the occasion of World Ozone Day, 2021 the Hub prepared and published a new flyer highlighting different ozone-friendly products that may faciliatate in protection of the ozone layer. Social media as the Hub's website, facebook page and whatsapp are utilized for dissemination of the flyer to the public.

iii. Online Competitions for Mizoram College and School Eco-Clubs

Various online competitions for Eco-Clubs students at College and School levels were organised for creating awareness on ozone layer and its protection.

a. Online Quiz Competition for Mizoram School Eco-Club students.

On 14th September, 2021 *(Tuesday)*, online quiz competition on the topic 'Ozone Layer' was conducted for College Eco-club students. The online quiz was organised by the Hub in collaboration with Eco-Club, Govt. Zirtiri Residential Science College.

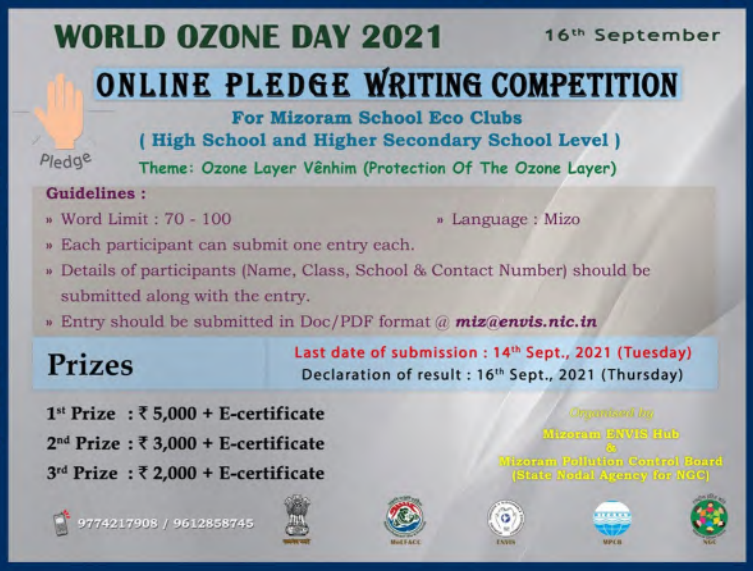
Around 70 eco-club students from 9 different colleges within Mizoram participated at the quiz competition.

Result of the quiz competition is as below:

1st	Ms. Christian Varparhi	5th Sem. *(Zoology)*	Govt. Zirtiri Residential Science College, Aizawl
2nd	Mr. K. Lalhmingsanga	5th Sem. *(English)*	Govt. Aizawl West College
3rd	Ms. Cyndy Lalchhuanawmi	MOMP 5	Women's Polytechnic, Aizawl

b. Online Pledge Writing Competition for Mizoram High School and Higher Secondary School Eco-Club students.

High school and Higher school level eco-club students compete at an online pledge writing competition on the theme 'Protection of the ozone layer'.



Around 130 students from more than 50 different schools across the State submitted their pledges towards protection of the ozone layer making the competition a huge success.

Result of the pledge writing competition is as below:

1st	Mr. Zothanpuia	Class X	Govt. Bethlehem Vêngthlang H/S, Aizawl
2nd	Ms. Grace Lalhmangaihsangi	Class XI	H.S.S, Science Stream, College Veng, Aizawl
3rd	Ms. Lalhmangaihzuali	Class X	Govt. High School, Kawnpui, Kolasib District

c. Online Drawing Competition for Mizoram Primary School and Middle School Eco-Club students.

Online drawing competition under the theme 'Protection of the ozone layer' was held for Primary and Middle school level eco-club students.

More than 179 entries were received from students all over the State.

Result of the pledge writing competition is as below:

1st	Ms. T. Zothanpuii	Class VII	Sacred Heart H.S.S, Lunglei
2nd	Mr. Lalnunmawia Pautu	Class VII	Faith Hill School of Arts, Lunglei
3rd	Mr. K. Lallawmawma	Class VIII	Sacred Heart H.S.S, Lunglei

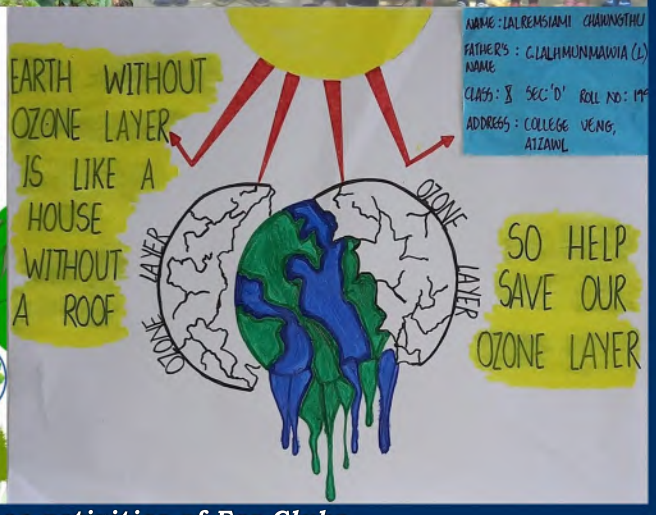
II. ECO-CLUB SCHOOLS AND COLLEGES

Several eco-club schools and colleges within Mizoram carried out awareness activities on the occasion of World Ozone Day, 2021.

Activities taken up includes organising observance function, cleanliness and sapling plantation drives, webinar, online pledge taking, competitions as poster making, drawing on theme relating to protection of ozone layer.

Pics: Webinars conducted by different College Eco-clubs as part of observance of World Ozone Day 2021

Eco-Club Bangkhuaia High School:Sailam
September Activity- 'World Ozone Day'



Pics: World Ozone Day 2021 observance activities of Eco-Clubs

DEPARTMENT OF
INFORMATION & PUBLIC RELATIONS
Government of Mizoram
Helpline: 102 (Toll Free) /0389-2323336 /2318336

30.09.2021
(7:00 AM)

MIZORAM COVID-19 UPDATE

TOTAL CASES	DISCHARGED	ACTIVE CASES	DEATHS
+1741		+1741	+1
93660	76512	16841	307

Sl. No	DISTRICT (Administrative District as per ICMR Data)	No. of Active Cases	No. of Discharged	No. of Deaths	TOTAL CASES (Cumulative
1	Aizawl	11649	47655	229	59533
2	Lunglei	925	5913	17	6855
3	Siaha	1078	2955	4	4037
4	Champhai	858	2320	2	3180
5	Kolasib	448	6480	24	6952
6	Serchhip	553	1784	4	2341
7	Lawngtlai	742	4921	20	5683
8	Mamit	342	3274	4	3620
9	Khawzawl	70	526	0	596
10	Hnahthial	144	399	1	544
11	Saitual	32	285	2	319
STATE TOTAL		16,841	76,512	307	93,660

Source : IDSP

Issued by Department of Information & Public Relations, Govt. of Mizoram

To,

ENVIRONMENTAL INFORMATION SYSTEM (ENVIS) HUB
NEWSLETTER
Electronic version available : http://www.mizenvis.nic.in