N.E.S. SCIENCE COLLEGE NANDED

* Project Work Book *

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SCIENCE COLLEGE NANDED

For Post Graduation Course

Project Work Book

A

Project Report

On

DIVERSITY OF ACQATID INSECT IN KARADKHED DAM

Submited to

Swami Ramanand Teerth Marathwada University,

Nanded – 431605

In partial fulifillment of the requirement for the award of degree pf

MASTER OF SCIENCE

IN

ZOOLOGY

Submitted By

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M.S.C. II year, Zoology

*Under the Guidance of *

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N.E.S SCIENCE COLLEGE , NANDED

ACADEMIC YEAR 2020-2021

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DECLARTATION

I declared that the project work entitled **"DIVERSITY OF AQUATIC INSECT IN KARADKHED DAM"** been completed under the guidance of **Dr. kiran shillewar,** N.E.S. Science College , Nanded. This project is original work done by me and my partner it had not been previously submitted to the university.

Name of the Guide

Dr. Kiran Shillewar

N.E.S. Science college Nanded

Name of the Student

Godavari Nagshettiwar

M.S.C. II Year,Zoolgy Nanded

CERTIFICATE

This is certify to that Miss. Godavari Vijaykumar Nagshettiwar, has accomplished project entitled **"DIVERSITY OF AQUATIC INSECT IN KARADKHED DAM".**

In the subject of Zoology following the instruction of the university. The project is based on collected reference and is original work done by me and it not been previously submitted to university.

Dr. Kiran Shillewar
Head of the Department
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Dr. D. U. Gawai
PRINCIPAL
Science college Nanded.

CERTIFICATE

This is certify that Miss. Godavari Vijaykumar Nagshettiwar, M.S.C. II year Zoology student has worked on the project entitled **"Diversity of Aquatic Insect in Karadkhed Dam."** This is project has submitted for the zoology subject and completed under the instruction of the university. The project is based on collected reference and original work done by him and it had not been previously submitted to the university.

Name and signature of Guide

Dr. Kiran Shillewar
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INTRODUCTION

The Karadkhed Dam is earth fill dam build across the local dam near degloor distance Nanded. Its official Name is Karadkhed Dam DO1295. Irrigation and drinking water supply are the primary purpose behind this dam.

The height is 19 meters, and the length is 1454 meters of the dam. “4770 feet The volume is content is 498 km^3 (119 cu mi) and gross storage capacity is 12,000.00 km^3 it is situated near Karadkhed which is 12 km. away from sub –district head quarter Degloor and 93 km. away from district head quarter Nanded district in state of Maharashtra In India.

The total capacity of karadkhed dam 10,980km^3. And surfaced area 289 km^2 . In karadkhed dam various type of fishes found. In those fished some carnivorous , some are omnivorous. In this karadkhed dam different type of fishes culture is observed

IMPORTANT OF THE STUDY

In karadkhed dam their reservoir the main food resource consumed by the fish fauna are originated in aquatic system such as aquatic insect. Other invertebrate, Zooplankton, detritus, and fish, sustaining great diversity and abundance of fishes. Among aquatic insect several groups are abandand in neotropical, recevior, especially deep turns of the family Nepidae, Gerridac, Dytiscidae Betostomatodae. This is organism have and important role inmetabolism of aquatic system and as food resource for fish instream and higher order dam some are carnivorous and some are omnivorous fishes have mainly food of this aquatic insects. We studied about this aquatic insects in karadkhed dam.

STUDY OF KARADKHED DAM

Material and Method

Material - 1) Plastic Jar

2) Insect Net

Method - The insect of collected from Kardkhed dam

Infresh water insect and polluted water insect collected in early morning in kardkhed dam the insect is collected by mechanical system.

In dam more type of insects is collected in following.

RESULT AND DISCUSSION

In project " **DIVERSITY OF AQUATIC INSECT IN KARADKHED DAM**" various type insects has collected from the four points. Identified and classified following:

A: NEPA

Classificataion :

Kingdom : Animalia
Phylum : Arthropoda
Class : Insecta
Order : Hemiptera
Infraorder : Nepomorpha
Family : Nepidae
Genus : Nepa

Nepa is a genus belong to family Nepidae, known as water scoropions. There ae six species found in fresh water habits in northern hemisphere the adults nymphs of most new world ranatra species posses mechanisms which is may be unic aquatic insects. They are oval bodied aquatic insects with raptorial front legs. Like other members of the

nepidae, they have a pair of non retracable cerci like brething tubes on the termina abdominal segments. A characteristics which is readly distinguish them from the Belastomatidae. Their primary staples are other insects and small aquatic vertebrates they can In flict a painful bite when handled.

Approximately 150 species of aquatic invertebrates of the family Nepidae the water scorpion for seizing pray and long thin. Whip like strcture at its posterior end. This tail made up off to attached extended above the surface water enabling the animal the air. The bite of the scorpion.They are poor swimers able to propel themselves with jerky legs motions. Nepdae is blackish brown in colour and 1 to 2 inches in length water scorpion are able to swim by moving their front legs up and down kicking the middle and hind pairs the latter to sets of legs are also used for crawling.

B : CORIXA

Classification

Phylum	- Arthopoda
Order	- Hemiptera
Class	- Insecta
Family	- Corixidae
Genus	- Corixa

This is a brown bug lives in water. It has been long hind legs, covered in hairs, that it uses rather like paddles to swing. Its middle legs are slightly shorter but its front legs are very short and are used to scoop up food.

Water Boatmen are extremely common in the shallow water of ponds, legs streams, and even Muddy pools. They have larger eyes and their flattened bodies are dark greyish. Often mottled and faintly cross – lined with yellow colour. The Middle legs are extra ordinary long the hind legs are flattened and fringed for swimming the air is held benth the hemelytra they are not predacious and mainly feed on plant debris and zooplanktons and thus complete for natural food with spawm and fry they spend most of their time at the bottom coming to the surface only to renew their air supply it eat plants debris and algae the length of water botmen 12 meter In long.

C : NOTONECTA

Classification

Phylum - Arthopoda
Order - Hemiptera
Class - Insecta
Family - Notonectidae
Genus - Notonecta
Species - N. Undulata

Notonecta Undulata also known by the common name grousewinged backswimmer, they are a type of hemipteran or true bug this is a aquatic insects typically spend their time at the water surface using their abdomen and legs to clean to the underside of the surface tension.

Notonecta can be found in both lotic and lentic environments they typically prefer small ponds and lakes where the water is slow moving with less current they stop swimming they float back up to the surface they are approximately 10 to 12 mm long their antennae are four segmented.

The back swimmers are commonly in most quiet ponds the world over they are often strikingly coloured white yellowish gold, green or bluish back; with large and some times red eyes this bugs are deep body convex dorsally keeled venterally with side sloping the hind leg are long and fringed for swimming they are predators and attack on fish spawn and fry.

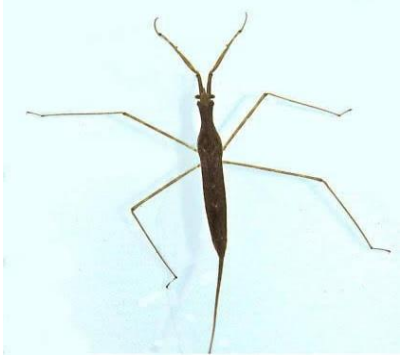
D : BELOSTOMA

Classification :

Phylum - Arthopoda
Order - Hemiptera
Class - Insecta
Family - Betostomatidae
Genus - Belostoma

The Belestoma also known as Gaint water bug 22 to 70 mm long live in pond quiet pools resting in consipiously on the bottom or sitting in the vegetation with the oval bodies are brown are dull grinish in colour. They are fiercely predacious, attacking insects crustaceans, tadpoles frogs and fish larger several times than their size. The head is little protruded in front and bears as short powerful beak. The four legs are predacious and hind legs are gilsteing silvery bubbles wings are functional and it is found In the light at night. It is handled with great care as it is puncture is poisonous and painful.

E : RANATRA



Classification
Phylum - Arthopoda
Order - Hemiptera
Class - Insecta
Family - Nepidae
Genus - Ranatra

This is brown insect are primary found in stagant are slow moving water like pounds. Marshes and canals but can also be seen in streams. Exceptionally they have been record from hypersaline legs and brackish lagoons.

This is Ranatra insects of the family Nepidae is known as water scorpions or water stick insects there are around 100 Rantra species in fresh water habitats around the world both in warm and temperate reasons with the adult body length is 2-6 cm like other members in the family they have along tail like siphon or breathing tubes on the rear end of the body. 0.8 to 2.4 inch depending on extra species and females average larger than males of the same species the to larger species are the east Asian. Are south American.

It can be grow to 20- 40 mm in length exclusive of the respiratory tube it can be remain beneath the water surface for half and hour by consuming air store in the long posterior filamentous tracheal tubes it is dull green in colour with sluggish and secretive habits it tends to lurk in the mud and vegetation of ponds the prothorax is narrow than the head the four legs are modified by for grasping the pray while the piercing beak nflicts death by the ingecting saliva like poison.

F : DRAGON FLY NYMPH

Classification :
Phylum - Arthopoda
Order - Odonata
Class - Insecta
Family - Gomphidae

A dragon fly is an insect belonging to order Odonota the adult dragon flies are characterized by larger multifaceted eyes, to pairs of strong, transparent wings some times with the coloured patches and elongated body. Which is are similar instructure though usually lighter in build the wings of most dragonflies are held flat and away from the body while dameselfiles hold their wings folded at rest dragonflies are metallic colours produced structural colouration making them concepicuous in flight and adult dragonflyes compound eyes have nearly 24,000. Ommatidia each fossils of very large dragonfly this is wingspans up to above 75 mm. They are carnivorous feeding on insects-tadpoles and small fish they catch the pray buy shooting out the dubble hinged lower lip head broad and the lower side is consuled by the development of lower lip in the form of long jointed arm like structure Antennae are short.

G : WATER STRIDERS

Classification:
Phylum - Arthopoda
Order - Hemiptera
Class - Insecta
Family - Gerridae

Water Striders often seen running or sketting in group over the surface of a pond or stream are slender dark in colour and generally more than 5 mm and 0.2 inch it do not bite people, they are highly efficient predators. A water strider rapidally graps a small insects with its front legs them uses its mouth part to pierce the preys body and suck out its juices.

Water striders lay eggs on rocks or aquatic vegetation upon hatching, they undergoes incomplete metamorphosis, where the series of in mature nymph stages pretty much resemble the adults, only smaller the final molt produced and adults that is sexually mature. The front to legs near the mouth and are shotment for holding prey in place there are over 1700 species in this family which are found in fresh water.

H: VIVIPARUS

Phylum	- Mollusca
Order	- Mesogastropoda
Class	- Gastropoda
Family	- Viviparidae

They are common near the rocks at the edge of a water body. It has a brownish yellow shell with the three very distant dark bands running round each whorl. The operculum is a thick and conspicuous on the dorsal part of the foot. The tentacles are well developed. Shell globose and medium to large is size. Foot moderate not extending beyond the simple snout with broad sole .

Gastropodas are found in favour moist environments most native species can be found hiding under the logs and rocks in leaf litter are under the bark of trees themselves to a hard surface with dried mucus and staying in active this is sometime known as aestivation most of gastropodas are hermaphordites which individuals snails or slugs meet they exchange bundles of sperm eggs are then usually laid in crevics in th soil are under rocks.

Most gastropodas are herbivores and scavengers feeding on fungi and few are carnivorous and may prey on other snails. All gastropodas have a well developed head with eye and 1 to 2 pairs of tentacles.

H : LUMBRICILLUS

Phylum - Annelida
Order - Tubificida
Class - Oligocheata
Family - Enchytraeidae

They are resemble small earthworm and include both terrestrial species is known as potworms . They are found moist compost when gardens are transplanting plants to bigger pots on the roots of the plants growing water are among mosses are algae. Body colouration yellow or red clitellum is covered by over the segments 11 and 12 setae simple pointed and sigmoid and mostly there are four bundles per segments spermathecal opens between segments 4 or 5 they seem instead to game most of their nutrients by consuming fungal hyphae and bacterial material together with the fra or extra other soil animals.

CONCLUSION

The present study revals that the aquatics insects play a vital in the ecological structure and ecosystem function of karadkhed dam.

The good representation of pollution sensitive taxa like isonychia, helicopsyche, isca, petersela the importants of pristine river and stremas like karadkhed dam and its tributaries, still present the dam one of the global bio-diversity hotspots, increasingly falling prey to anthropogenic pressure.

Aquatic insects not only enhance streams nutrients cycling through their feeding strategies but also support communities of large organism like fish frog and others.

The water bodies of dam beginning the main center of specially aquatic faunal endemism such as of fish and amhibians biomonitroring of more number of streams and dam aquatic insects community and working for their holistic conservation.

REFERENCES

Insect collection at Karadkhed dam