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RESEARCH ARTICLE

CONSERVATION OF BIODIVERSITY WITH PARTICULAR REFERENCE OF BUTTERFLY FAUNA OF GIR PROTECTED AREA, GUJARAT.

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Manuscript Info

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Abstract

A detailed study on the butterfly species diversity was carried out during 2011 and 2014 using Pollard walk method in the Dry Deciduous Teak forest of Gir National Park in Junagadh District of Gujarat State, India to assess the protected species under various schedules of the Wildlife (Protection) Act, 1972.

Key words:-

Gir National Park, Indian Wildlife (Protection) Act 1972, Pollard walk, Species diversity.

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Introduction:-

India with only 2.3% of the total land mass has around 91,206 animal species comprising 7.43% of the total (Ramakrishna and Alfred, 2007). Taking cognizance of the alarming situation of the depletion of natural habitats, the Government of India took significant steps in establishing the Indian Board for Wildlife in 1952 followed by the Indian Wildlife (Protection) Act, 1972. India also became signatory to the CITES, IUCN and world-wide Fund for nature. The Government of India has so far protected more than 4% of the geographical area, with 99 National Parks, 513 Wildlife Sanctuaries, 41 Conservation Reserves and 4 Community reserves (Anonymous, 2008) with a forest cover of 20.64% (Anonymous, 2003).

The Government of India under Indian Wildlife (Protection) Act, 1972 provided protection to 452 species of butterfly in three Schedules (out of six) as in Schedule I, Part IV, 128 species of butterfly; in Schedule II, Part II, 305 species and in Schedule IV (Secs. 2,8,9,11 and 61), 19 species (Anonymous, 2003). Due to advancement in taxonomy, the names of species and their families changed. Sharma and Ramamurthy (2010) have updated the list of 452 butterfly species and their families as per Indian Wildlife (Protection) Act, 1972 updated. The export of butterflies (dead or alive) and decorative articles from them are prohibited. As per Section-40 (92) of the Act, no person can acquire, receive, to keep in control, custody or possession, any of the species included in the above schedule without previous permission in writing of the Chief Wildlife Warden or his authorized officer.

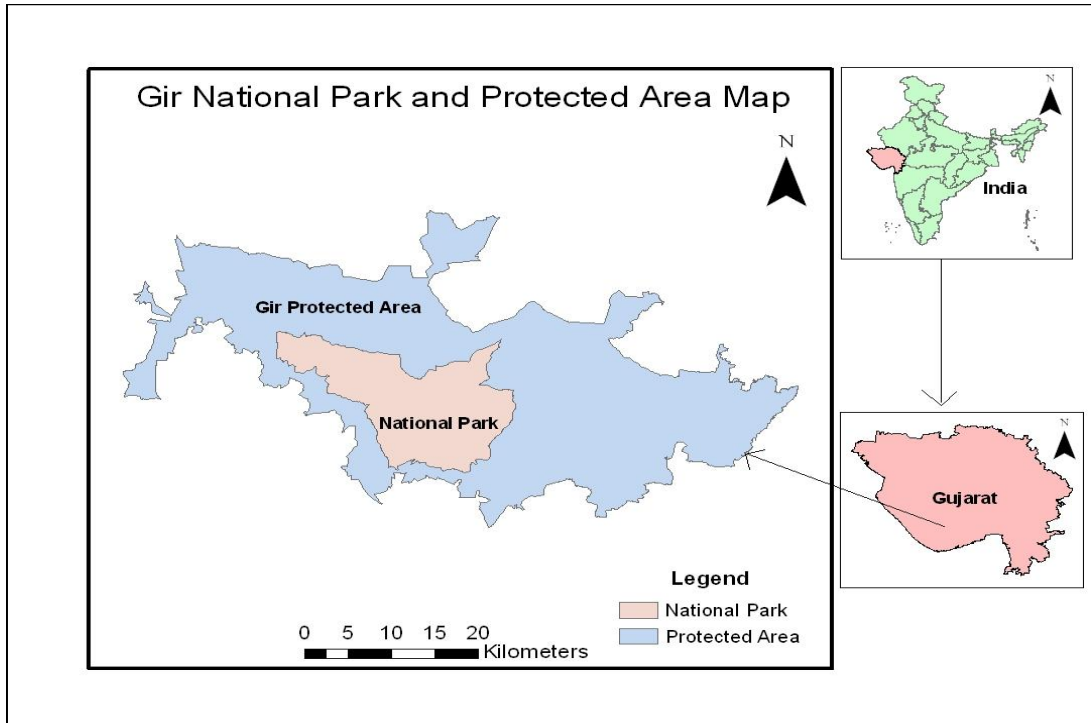
The available information on the conservation importance of Indian butterfly's species and sub-species is very meagre. Though, some earlier authors (Sharma and Ramamurthy, 2010 and Kunte, 2008) have published various accounts on the insects, to be included in the WPA, 1972. During the course of the present investigation, an attempt has been made to assess the protected species of butterflies of Gir National Park under various schedules of the Wildlife (Protection) Act, 1972.

Material and Methods:-

The survey was conducted during 2011-2014 using Pollard Walk on fixed transects as per the methodology adopted by Pollard and Yates (1993) in order to enumerate the butterfly species in ten different habitats of Gir PAs. Existing

patrolling paths were used as transects for surveys. All flying butterflies on these selected transects were recorded between 9.00 am to 4.00 pm.

For the purpose of collection of samples, a data sheet was designed following the techniques developed and adopted by Pollard and Yates, (1993) which is comprised with all the variables such as abiotic factors, GPS factors, host plants *etc.*(separately) , collected from each of the study - sites in Gir PA Gujarat.



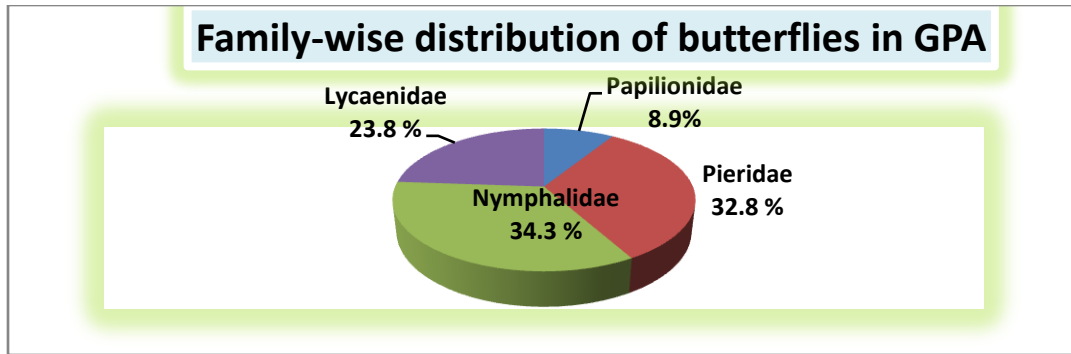
Results and Discussion:-

A total of 67 species belonging to all 42 genera, representing 4 families, have been recorded from GPA. The family Nymphalidae was found dominant with 15 genera and 23 species followed by family Pieridae representing 10 genera and 22 species. Family Lycaenidae is comprised of 14 genera and 16 species whereas Papilionidae with 3 genera and 6 species.

Table 1:- Distribution of butterfly species family- wise in GPA

S.No.	Family	Common Names	Genera	Species
1.	Pailionidae	Swallowtail butterflies	3	6
2.	Pieridae	White and yellow butterflies	10	22
3.	Nymphalidae	Brush-footed butterflies	15	23
4.	Lycaenidae	Blues, hairstreaks & gossamer-winged butterflies	14	16
		Total	42	67

The existing check- list containing 44 species of butterfly as presented by Kiran and Ahir (2005) from GPA has been updated to 67 species, thus 23 species has been added to the earlier recorded checklist which was comprised of only 44 species.



Among the 67 species recorded from GPA during the study of two years, four species of butterflies *Pachiliopta hector*, *Hypolimnasmisippus*, *Castaliusrosimon* and *Dendoryxepijarbas* are included Schedule -I and another four species namely *Charaxesfabius*, *Ceporanerissa*, *Euchrysopsnejus* and *Lampidesboeticus* are included under Schedule -II, while remaining only one species *Euploea core* comes under Schedule – IV as per Wildlife protection Act (1972).

Table 2:- List of butterflies with their status (Wild Life Protection Act- 1972) in GPA.

S.No	Family	Species	Status as WPA (1972)
1.	Papilionidae	<i>Pachiliopta hector</i>	Schedule – I (WPA- 1972)
2.	Nymphalidae	<i>Hypolimnasmisippus</i>	Schedule – I (WPA- 1972)
3.	Nymphalidae	<i>Charaxesfabius</i>	Schedule – II (WPA- 1972)
4.	Nymphalidae	<i>Ceporanerissa</i>	Schedule – II (WPA- 1972)
5.	Nymphalidae	<i>Euploea core</i>	Schedule – IV (WPA- 1972)
6.	Lycaenidae	<i>Euchrysopsnejus</i>	Schedule – II (WPA- 1972)
7.	Lycaenidae	<i>Castaliusrosimon</i>	Schedule – I (WPA- 1972)
8.	Lycaenidae	<i>Lampidesboeticus</i>	Schedule – II (WPA- 1972)
9.	Lycaenidae	<i>Dendoryxepijarbas</i>	Schedule – I (WPA- 1972)

While sampling in the GPA, eight species of butterflies e.g., *Graphiumnomius*, *Ariadne merione*, *Bybliailithiya*, *Paronivaleria*, *Tarucustherophrastus*, *Azanusjeasons*, and *Spindasisictis* were rarely encountered in a very less numbers and as such these species have been given a status of rare species in respect of GPA.

Table 3:- Status of rare - species in GPA as per the revised and updated check-list of GPA

S.No	Family	Species	Status in GPA
1.	Papilionidae	<i>Graphiumnomius</i>	Rare
2.	Nymphalidae	<i>Ariadne merione</i>	Rare
3.	Nymphalidae	<i>Bybliailithiya</i>	Rare
4.	Pieridae	<i>Paronivaleria</i>	Rare
5.	Lycaenidae	<i>Curetisthetis</i>	Rare
6.	Lycaenidae	<i>Tarucustherophrastus</i>	Rare
7.	Lycaenidae	<i>Azanusjeasons</i>	Rare
8.	Lycaenidae	<i>Spindasisictis</i>	Rare










 <p data-bbox="261 611 537 659"><i>Pachiliopta hector</i></p>	 <p data-bbox="693 611 997 659"><i>Hpolimnasmissipus</i></p>	 <p data-bbox="1122 604 1382 659"><i>Charaxesfabius</i></p>
 <p data-bbox="261 1094 526 1150"><i>Ceporanerissa</i></p>	 <p data-bbox="693 1094 971 1150"><i>Euploea core</i></p>	 <p data-bbox="1097 1094 1382 1150"><i>Euchryopsnejus</i></p>
 <p data-bbox="269 1583 537 1640"><i>Castaliusrosimon</i></p>	 <p data-bbox="699 1583 976 1640"><i>Lampidesboeticus</i></p>	 <p data-bbox="1097 1583 1398 1640"><i>Dendoryxepijarbas</i></p>

Fig:- Species of butterflies protected under Wild Life Protection Act- 1972 in GPA.

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