

Diversity of Aquatic and Marshy Angiosperms in Lakhbahosi Bird Sanctuary Kannauj District, Uttar Pradesh, India

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Introduction

Wetlands are defined as lands transitional between terrestrial and aquatic ecosystem where the water table is usually at or near the surface or the land is covered by shallow water (Mitch and Gosseling 1986). The value of world wetland is increasingly receiving due attention as they contribute to a healthy environment in many ways. They are one of the most productive ecosystems of the world and essential life supporting system providing a wide array of benefits. They are transitional zones that occupy intermediate position between land and open water. The studied area has contributed to the healthy population of migratory birds and more partial to paddy fields than natural marshlands. Little attention has been paid to the systematic study of aquatic and wetland macrophytes of India. An account of hydrophytic plants of India was published by Biswas and Calder (1937); Subramanyam (1962); Deb (1976); Islam (1989) and recently by Cook (1996). In Uttar Pradesh Sen and Chatterjee (1959); Bhattacharya and Malhotra (1964); Trivedi and Sharma (1965); Singh and Singh (1972); Singh and Tomar (1983); Srivastava *et al.* (1987); Singh and Singh (1991); Sharma and Dhakre (1995); Malia and Singh (2004); Narain (2006); Singh (2006); Saini *et al.* (2010); Malik *et al.* (2012) and Singh and Narain (2012)

has described aquatic flora of some districts. Still large areas remain unexplored. Present communication includes phenology, ecological classification, life form, life period and fruit type of the species. Herbarium specimens have been deposited in Duthie Herbarium, Department of Botany, University of Allahabad, Allahabad.

Location and Habitat

Lakhbahosi Bird Sanctuary is located near Lakhbahosi village about 40 km from Kannauj district, Uttar Pradesh. It is one of the largest bird sanctuary of Uttar Pradesh, covering 80 km². It is situated at Lat/long: 26°54'47.50" N 79° 39' 19.20" E and also a stretch up to Upper Ganga canal. Lakhbahosi is best reached by road. It is 25 km from Kannauj railway station. It lies on Grand Trunk road about 70 km from Kanpur. The Lake is spread over 3 Km² area and is home to various migratory birds from November to March. In month of December, January and February it shows maximum potential. Jackals, Blue-bulls, Mongooses, Fishing cats and Monkeys are the other animals spotted here.

Aquatic Vegetation of the Wetland

In the present enumeration, aquatic and marshy plants are classified into following life forms depending





upon nature and type of habitat and their contact with soil, air and water.

1. **Free-floating hydrophytes (FF)** – Plants are basically attached species with floating leaves yet, their detached branches occur as free-floating. It includes 7 species of 7 genera e.g. *Neptunia oleracea*, *Eichhornia crassipes* and *Hygroryza aristata*.
2. **Suspended hydrophytes (SH)** – Rootless submerged hydrophytes that are in contact with water only. It includes 4 species of 3 genera e.g. *Utricularia exolata* and *Ceratophyllum demersum*.
3. **Submerged anchored hydrophytes (SA)** – These are entirely or for the most part in contact with soil and water only. It includes 9 species of 4 genera e.g. *Ottelia alismoides*, *Vallisneria spiralis* and *Potamogeton crispus*.
4. **Floating leaved anchored hydrophytes (FLA)** – These are in the contact with soil, water as well as in air. It includes 9 species of 5 genera e.g. *Nymphaea stellata*, *Nelumbo nucifera*, *Sagittaria guayanensis* and *Aponogeton crispum*.
5. **Floating shoots anchored hydrophytes (FSA)** – Rooted in muddy substratum with their shoots floating on the water surfaces. It includes 2 species of 2 genera e.g. *Ludwigia adscendens* and *Ipomoea aquatica*.
6. **Emergent amphibious hydrophytes (EA)** – The roots, the lower portion of the stem and in some cases, even the lower leaves are usually submerged under water. It includes 24 species of 17 genera e.g. *Aeschynomene indica*, *Ammannia auriculata* and *Achyranthes aquatica*.
7. **Wetland hydrophytes (WL)** – These are rooted to the soil saturated with water, at least in the early part of life. It includes 91 species of 46 genera e.g.

Ranunculus sceleratus, *Caesulia axillaris* and *Scirpus articulatus*.

Discussion

Altogether 146 species belonging to 84 genera and 41 families were recorded from this area. Out of them Cyperaceae turned out as dominant family having 27 species followed by Poaceae with 17 species, Polygonaceae with 12 species, Asteraceae with 8 species, Ongraceae and Scrophulariaceae each with 5 species. An analysis of fruits found 13 types from collected plants and revealed that capsule is the most common type of fruit with 44 species, nut with 41 species, caryopsis with 19 species, cypsela with 7 species and other types of fruits. An analysis of the life period of aquatic and marshy angiospermic plants revealed that 69 species are annual and 43 species have been recorded as perennial while 28 species have been found to be annual plants which on availability of water and favourable conditions may behave as perennials. There are 4 species which have been found to be perennial plants which sometimes behave as annuals if conditions are unfavourable while 2 species were found to be annuals but sometimes behaving as biennials on the availability of water and favourable conditions (Table-1).

Nelumbo and *Nymphaea* were found to the form associations with maximum number of species. Most of the group associations homogenous i.e. association is formed among their own successional groups. In emergent groups, populations are gregarious and found not to allow other vegetation growing nearby.

Lakshbahosi wetland exhibits a rich biodiversity. It is under heavy anthropogenic pressure due to agricultural activities around the wetland, which led to habitat loss and degradation. Some part of wetland have been drained and transformed into rice fields.

Table 1: List of aquatic and marshy angiosperms in Lakhbahosi Bird Sanctuary Kannauj district, Uttar Pradesh

Sl. No.	Name of the plant species	Family	Life Form	Life Period	Phenology	Fruit type
1	<i>Ranunculus sceleratus</i> L.	Ranunculaceae	WL	A	Jan.-April	ACHENE
2	<i>Nymphaea nouchali</i> Burm	Nymphaeaceae	FLA	P	Aug.-Nov.	BERRY
3	<i>Nymphaea pubescens</i> Willd.	Nymphaeaceae	FLA	P	Aug.-Nov.	BERRY
4	<i>Nelumbo nucifera</i> Gaertn.	Nelumbonaceae	FLA	P	Aug.-Oct.	ACHENE
5	<i>Rorippa indica</i> (L.) Hiern	Brassicaceae	WL	A/B	Dec.-July	SILIQUEA
6	<i>Bergia ammannioides</i> Roxb.	Elatinaceae	EA	A	Aug.-April	CAPSULE
7	<i>Bergia capensis</i> L.	Elatinaceae	EA	A	Aug.-Nov.	CAPSULE
8	<i>Corchorus capsularis</i> L.	Tiliaceae	WL	A	Sept.-Nov.	CAPSULE
9	<i>Corchorus olitorius</i> L.	Tiliaceae	WL	A	Sept.-Jan.	CAPSULE
10	<i>Oxalis corniculata</i> L.	Oxalidaceae	WL	P	Jan.-Dec.	CAPSULE
11	<i>Oxalis corymbosa</i> DC.	Oxalidaceae	WL	P	April-June	CAPSULE
12	<i>Aeschynomene aspera</i> L.	Fabaceae	EA	P	Aug.-Jan.	POD
13	<i>Aeschynomene indica</i> L.	Fabaceae	EA	P	Oct.-Nov.	POD
14	<i>Sesbania bispinosa</i> (Jacq.) W. F. Wight	Fabaceae	WL	A/B	Sept.-Jan.	POD
15	<i>Neptunia oleracea</i> Lour.	Mimosaceae	FF	A/P	Oct.-Jan.	POD
16	<i>Ammannia auriculata</i> Willd.	Lythraceae	EA	A	Aug.-June	CAPSULE
17	<i>Ammannia baccifera</i> L.	Lythraceae	EA	A	Nov. - April	CAPSULE
18	<i>Ammannia multiflora</i> Roxb.	Lythraceae	EA	A	Nov.-Feb.	CAPSULE
19	<i>Rotala indica</i> (Willd.) Koehne	Lythraceae	WL	A	Oct.-Feb.	CAPSULE
20	<i>Ludwigia adscendens</i> (L.) Hara	Onagraceae	FSA	P/A	Jan.-June	CAPSULE
21	<i>Ludwigia hyssopifolia</i> (G. Don) Exell	Onagraceae	EA	A	Throughout the year	CAPSULE
22	<i>Ludwigia octovalvis</i> (Jacq.) Raven	Onagraceae	EA	A	Throughout the year	CAPSULE
23	<i>Ludwigia perennis</i> L.	Onagraceae	EA	A	Nov.-Jan.	CAPSULE
24	<i>Ludwigia prostrata</i> Roxb.	Onagraceae	EA	A	Nov.-April	CAPSULE
25	<i>Trapa natans</i> L.	Trapaceae	FLA	A	Sept.-Oct.	DRUPE
26	<i>Centella asiatica</i> (L.) Urban	Apiaceae	WL	A/P	May-Jan.	CREMO-CARP
27	<i>Caesulia axillaris</i> Roxb.	Asteraceae	EA	A/P	Sept. - May	CYPSELA
28	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	WL	A/P	Throughout the year.	CYPSELA
29	<i>Enhydra fluctuans</i> Lour.	Asteraceae	EA	A/P	Jan.-April	CYPSELA
30	<i>Gnaphalium pensylvanicum</i> Willd.	Asteraceae	WL	A	Dec.-May	CYPSELA
31	<i>Gnaphalium polycaulon</i> Pers.	Asteraceae	WL	A	Nov.-Feb.	CYPSELA

Sl. No.	Name of the plant species	Family	Life Form	Life Period	Phenology	Fruit type
32	<i>Sphaeranthus senegalensis</i> DC.	Asteraceae	WL	A	Dec.-April	CYPSELA
33	<i>Spilanthes paniculata</i> Wallich ex DC.	Asteraceae	WL	A	Sept.-Feb.	CYPSELA
34	<i>Sphenoclea zeylanica</i> Gaertn.	Asteraceae	WL	A	Aug.-Nov.	CAPSULE
35	<i>Canscora decurrens</i> Dalzell	Gentianaceae	WL	A	March-Nov.	CAPSULE
36	<i>Canscora diffusa</i> (Vahl) R. Br.	Gentianaceae	WL	A	Dec.-March.	CAPSULE
37	<i>Hoppea dichotoma</i> Hayne	Gentianaceae	WL	A	Oct.-Nov.	CAPSULE
38	<i>Nymphoides cristatus</i> (Roxb.) Kuntze	Menyanthaceae	FLA	A/P	Feb.-March	CAPSULE
39	<i>Nymphoides indicum</i> (L.) Kuntze	Menyanthaceae	FLA	A/P	Aug.-Nov.	CAPSULE
40	<i>Hydrolea zeylanica</i> (L.) Vahl	Hydrophyllaceae	EA	A	Nov.-Feb.	CAPSULE
41	<i>Heliotropium ovalifolium</i> Forssk.	Boraginaceae	WL	A	Aug.-June	UTRICLE
42	<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	FSA	P	Sept.-Feb.	CAPSULE
43	<i>Ipomoea carnea</i> Jacq.	Convolvulaceae	WL	P	Throughout the year	CAPSULE
44	<i>Bacopa monnieri</i> (L.) Wettst.	Scrophulariaceae	WL	P/A	July-Dec.	CAPSULE
45	<i>Dopatrium junceum</i> (Roxb.) Buch.-Ham. ex Benth.	Scrophulariaceae	WL	A	Aug.-Oct.	CAPSULE
46	<i>Limnophila indica</i> (L.) Druce	Scrophulariaceae	EA	A/P	Aug.-March	CAPSULE
47	<i>Mazus pumilus</i> (Burm. f.) Steenis	Scrophulariaceae	WL	A	Nov.-April.	CAPSULE
48	<i>Veronica anagallis-aquatica</i> L.	Scrophulariaceae	WL	A/P	Jan.-April	CAPSULE
49	<i>Utricularia exoleta</i> R. Br.	Lentibulariaceae	SH	A/P	Sept.-Jan.	CAPSULE
50	<i>Utricularia stellaris</i> L. f.	Lentibulariaceae	SH	A/P	Dec.-March	CAPSULE
51	<i>Hygrophila auriculata</i> (Schumach.) Heine	Acanthaceae	WL	A/P	Oct.- Jan.	CAPSULE
52	<i>Hygrophila polysperma</i> (Roxb.) T. Anderson	Acanthaceae	WL	A	Oct.-April	CAPSULE
53	<i>Justicia quinquangularis</i> (Nees) C. B. Clarke	Acanthaceae	WL	A/P	Aug.-April	CAPSULE
54	<i>Phyla nodiflora</i> (L.) E. Greene	Verbenaceae	WL	A	Throughout the year.	DRUPE
55	<i>Achyranthes aquatica</i> R. Br.	Amaranthaceae	EA	A/P	Sep.-Nov.	NUT
56	<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	Amaranthaceae	EA	P	April-Nov.	UTRICLE
57	<i>Alternanthera sessilis</i> (L.) R. Br. ex DC.	Amaranthaceae	WL	P	Throughout the year.	UTRICLE
58	<i>Polygonum barbatum</i> var. <i>barbatum</i> Khan and Hassan	Polygonaceae	WL	P	Aug.-May	NUT
59	<i>Polygonum barbatum</i> var. <i>stagninum</i> (F. Ham. ex Meissn.) Stewart	Polygonaceae	WL	P	Nov.-May	NUT

Sl. No.	Name of the plant species	Family	Life Form	Life Period	Phenology	Fruit type
60	<i>Polygonum glabrum</i> Willd.,	Polygonaceae	WL	P	Aug.-April	NUT
61	<i>Polygonum hydropiper</i> subsp. <i>microcarpum</i> var. <i>triquetrum</i> Danser	Polygonaceae	EA	A	Feb.-Sept.	NUT
62	<i>Polygonum lapathifolium</i> var. <i>lanatum</i> (Roxb.) Steward	Polygonaceae	WL	A	Nov.-Feb.	NUT
63	<i>Polygonum limbatum</i> Meisn.	Polygonaceae	WL	A	May-Nov.	NUT
64	<i>Polygonum plebeium</i> R. Br.	Polygonaceae	WL	A	Oct.-April	NUT
65	<i>Polygonum pulchrum</i> Blume	Polygonaceae	WL	A	Oct.-March	NUT
66	<i>Polygonum lanigerum</i> R. Br.	Polygonaceae	WL	A/P	Aug.-April	NUT
67	<i>Polygonum serrulatum</i> Lag.	Polygonaceae	WL	P	April-Nov.	NUT
68	<i>Polygonum strigosum</i> R. Br.	Polygonaceae	WL	A/P	July-Nov.	NUT
69	<i>Rumex dentatus</i> L. subsp. <i>klotzschianus</i> (Meisn.) Rchb.	Polygonaceae	WL	A	Jan.-June	NUT
70	<i>Ceratophyllum demersum</i> L.	Ceratophyllaceae	SH	P/A	Oct.-Feb.	NUT
71	<i>Hydrilla verticillata</i> (L. f.) Royle	Hydrocharitaceae	EA	P	Sept.-Dec.	CAPSULE
72	<i>Ottelia alismoides</i> (L.) Pers.	Hydrocharitaceae	SA	A	Oct.-March	CAPSULE
73	<i>Vallisneria natans</i> (Lour.) Hara	Hydrocharitaceae	SA	A	Dec.-April	BERRY
74	<i>Eichhornia crassipes</i> (Mart.) Solms	Pontederiaceae	FF	P	April-Nov.	CAPSULE
75	<i>Monochoria vaginalis</i> (Burm. f.) K. Presl	Pontederiaceae	EA	A/P	July-Nov.	CAPSULE
76	<i>Commelina benghalensis</i> L.	Commelinaceae	WL	A	April-Nov.	CAPSULE
77	<i>Commelina hasskarlii</i> C. B. Clarke	Commelinaceae	WL	A	Nov.-Jan.	CAPSULE
78	<i>Commelina paludosa</i> Blume	Commelinaceae	WL	A	Oct.-Jan.	CAPSULE
79	<i>Cyanotis axillaris</i> (L.) D. Don	Commelinaceae	WL	A	Aug.-Nov.	CAPSULE
80	<i>Juncus bufonius</i> L.	Juncaceae	WL	A	Oct.- March	CAPSULE
81	<i>Typha angustifolia</i> L.	Typhaceae	WL	P	Oct.-April	NUTLET
82	<i>Pistia stratiotes</i> L.	Araceae	FF	P	Jan.-May	BERRY
83	<i>Lemna perpusilla</i> Torr.	Lemnaceae	FF	P	Jun.-Nov.	UTRICLE
84	<i>Spirodela polyrhiza</i> (L.) Schleid.	Lemnaceae	FF	A	July-Nov.	UTRICLE
85	<i>Wolffia arrhiza</i> (L.) Horkel ex Wimm.	Lemnaceae	FF	A	July-Nov.	UTRICLE
86	<i>Limnophyton obtusifolium</i> (L.) Miq.	Alismataceae	EA	A/P	Aug.-Oct.	ACHENE
87	<i>Sagittaria guayanensis</i> Humb.	Alismataceae	FLA	A	April-Oct.	ACHENE
88	<i>Sagittaria trifolia</i> L.	Alismataceae	EA	P	Dec.-May	ACHENE
89	<i>Butomopsis latifolia</i> (D. Don) Kunth	Butomaceae	EA	A	Sept.-April	NUTLET
90	<i>Najas graminea</i> Delile	Najadaceae	SA	A	Aug.-Oct.	ACHENE
91	<i>Najas indica</i> (Willd.) Cham.	Najadaceae	SA	A	Aug.-Sept.	ACHENE
92	<i>Najas minor</i> All.	Najadaceae	SA	A	Oct.-Feb.	ACHENE

Sl. No.	Name of the plant species	Family	Life Form	Life Period	Phenology	Fruit type
93	<i>Aponogeton crispum</i> Thunb.	Aponogetonaceae	FLA	P	Aug.-Oct.	FOLLICLE
94	<i>Aponogeton natans</i> (L.) Engl. and K. Krause	Aponogetonaceae	FLA	P	Aug.-Oct.	FOLLICLE
95	<i>Potamogeton crispus</i> L.	Potamogetonaceae	SA	P	Jan.-April	DRUPE
96	<i>Potamogeton nodosus</i> Poir.	Potamogetonaceae	SA	P	Oct.-June	DRUPE
97	<i>Potamogeton pectinatus</i> L.	Potamogetonaceae	SA	P	Nov.-April	DRUPE
98	<i>Potamogeton perfoliatus</i> L.	Potamogetonaceae	SA	P	Nov.-March	DRUPE
99	<i>Zannichellia palustris</i> L.	Zannichelliaceae	SH	P	Feb.-March	DRUPE
100	<i>Eriocaulon cinereum</i> R. Br.	Eriocaulaceae	EA	A	Aug.-Nov.	CAPSULE
101	<i>Cyperus brevifolius</i> (Rottb.) Hassk.	Cyperaceae	WL	P	Throughout the year	NUT
102	<i>Cyperus compactus</i> Retz.	Cyperaceae	WL	A	Sept.-Jan.	NUT
103	<i>Cyperus compressus</i> L.	Cyperaceae	WL	A	July-Dec.	NUT
104	<i>Cyperus corymbosus</i> Rottb.	Cyperaceae	WL	A	Dec.-Jan.	NUT
105	<i>Cyperus difformis</i> L.	Cyperaceae	WL	A	July-April	NUT
106	<i>Cyperus exaltatus</i> Retz.	Cyperaceae	WL	A	Sept.-Feb.	NUT
107	<i>Cyperus flavidus</i> Retz.	Cyperaceae	WL	A/P	Sept.-Nov.	NUT
108	<i>Cyperus iria</i> L.	Cyperaceae	WL	A	Aug.-Feb.	NUT
109	<i>Cyperus laevigatus</i> L.	Cyperaceae	WL	P	July-Sept.	NUT
110	<i>Cyperus michelianus</i> (L.) Delile	Cyperaceae	WL	A	Aug.-Oct.	NUT
111	<i>Cyperus nutans</i> Vahl	Cyperaceae	WL	A	July-Dec.	NUT
112	<i>Cyperus rotundus</i> L.	Cyperaceae	WL	P	July-March	NUT
113	<i>Eleocharis acutangula</i> (Roxb.) Schult.	Cyperaceae	WL	P	Aug.-Oct.	NUT
114	<i>Eleocharis atropurpurea</i> (Retz.) J. Presl and K. Presl	Cyperaceae	WL	A	Aug.-Dec.	NUT
115	<i>Eleocharis dulcis</i> (Burm. f.) Hensch.	Cyperaceae	WL	P	Sept.-Dec.	NUT
116	<i>Eleocharis palustris</i> (L.) R. Br.	Cyperaceae	WL	P	March-May	NUT
117	<i>Fimbristylis dichotoma</i> (L.) Vahl	Cyperaceae	WL	A/P	Throughout the year	NUT
118	<i>Fimbristylis litoralis</i> Gaud.	Cyperaceae	WL	A/P	Sept.-April	NUT
119	<i>Fimbristylis miliacea</i> (L.) Vahl	Cyperaceae	WL	A/P	Sept.-Dec.	NUT
120	<i>Fimbristylis ovata</i> (Burm. f.) Kern	Cyperaceae	WL	A/P	Aug.-May	NUT
121	<i>Fimbristylis schoenoides</i> (Retz.) Vahl	Cyperaceae	WL	P	Aug.-Dec.	NUT
122	<i>Scirpus articulatus</i> L.	Cyperaceae	WL	A/P	Oct.-Dec.	NUT
123	<i>Scirpus lacustris</i> L.	Cyperaceae	WL	P	Dec.-Feb.	NUT

Sl. No.	Name of the plant species	Family	Life Form	Life Period	Phenology	Fruit type
124	<i>Scirpus lateriflorus</i> J. F. Gmelin	Cyperaceae	WL	A	Throughout the year	NUT
125	<i>Scirpus litoralis</i> Schrad.	Cyperaceae	WL	P	Sep.-Nov.	NUT
126	<i>Scirpus maritimus</i> L.	Cyperaceae	WL	P	June- Oct.	NUT
127	<i>Scirpus roylei</i> (Nees) Parker	Cyperaceae	WL	A	Oct.-Jan.	NUT
128	<i>Arundo donax</i> L.	Poaceae	WL	P	Aug.-Nov.	CARYOPSIS
129	<i>Coix gigantea</i> Koenig ex Roxb.	Poaceae	WL	P	Oct.-Jan.	CARYOPSIS
130	<i>Coix lachryma-jobi</i> L.	Poaceae	WL	A	Aug.-Nov.	CARYOPSIS
131	<i>Echinochloa colonum</i> (L.) Link	Poaceae	WL	A	Aug.-April	CARYOPSIS
132	<i>Echinochloa crusgalli</i> (L.) P. Beauv.	Poaceae	WL	A	Aug.-Nov.	CARYOPSIS
133	<i>Echinochloa stagnina</i> (Retz.) P. Beauv.	Poaceae	WL	A/P	Sept.-Dec.	CARYOPSIS
134	<i>Hygroryza aristata</i> (Retz.) Nees ex Wight and Arnott	Poaceae	FF	A	Oct.-Dec.	CARYOPSIS
135	<i>Ischaemum rugosum</i> Salisb.	Poaceae	WL	A/P	Sep.-Dec.	CARYOPSIS
136	<i>Lolium temulentum</i> L.	Poaceae	WL	A	Dec.-May	CARYOPSIS
137	<i>Oryza rufipogon</i> Griff.	Poaceae	WL	P/A	Sept.-Nov.	CARYOPSIS
138	<i>Oryza sativa</i> L.	Poaceae	WL	A/P	Aug.-Nov.	CARYOPSIS
139	<i>Panicum paludosum</i> Roxb.	Poaceae	WL	A	July-Nov.	CARYOPSIS
140	<i>Paspalidium punctatum</i> (Burm. f.) A. Camus	Poaceae	WL	P	Aug.-Dec.	CARYOPSIS
141	<i>Paspalum paspaloides</i> (Michx.) Scribner	Poaceae	WL	A	June- Nov.	CARYOPSIS
142	<i>Paspalum scrobiculatum</i> L.	Poaceae	WL	A	Aug.-Sept.	CARYOPSIS
143	<i>Phragmites karka</i> (Retz.) Trin. ex Steud.	Poaceae	WL	P	Sept.-Nov.	CARYOPSIS
144	<i>Polypogon monspeliensis</i> (L.) Desf.	Poaceae	WL	A/P	July-Dec.	CARYOPSIS
145	<i>Rottboellia exaltata</i> L.	Poaceae	WL	A	Aug.-Nov.	CARYOPSIS
146	<i>Vetivaria zizanioides</i> (L.) Nash	Poaceae	WL	P	Aug.-Jan.	CARYOPSIS

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Painted Storks, Sandi Wildlife Sanctuary (Photo credit : Dr. K. K. Jha)