

Preliminary Checklist for the Flora of Wadi El Ghattara in Libya

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ABSTRACT

These lists represent the work of different Botany members over the years. The flora of Wadi El ghattara was studied and analyzed. Below we present a preliminary checklist of the plant species of the Wadi. The investigation revealed presence of 50 families, 162 genera and 250 species. This information could eventually aid in interpreting changes in populations due to man-made alterations.

Keywords: Checklist, Identification, Flora , Libya, Wadi El Ghattara.

INTRODUCTION

The study area is located in the southern of Al Jabal Al Akhdar and covers a total area of 1,200 sq. km. running roughly 60 km. to the South East of Benghazi city in a 20 km. wide strip which follows the natural course of the Wadi. (Lama 1999).

The catchment area of the Wadi and its tributaries are located around the town of Abyar and extends northwards until it reaches the sea at Garyounis. (Al-Fitori 2003).

The present work is based on intensive field work upon several visits between the period of 1987-2008 (El-Sherif & Singh ,1996).The plant collections were treated following the general Herbarium techniques pressing, poisoning and mounting then deposited in the Cyrenaica Herbarium (CHUG) at the Botany Department at Garyounis University.

MATERIALS AND METHODS

In the present study the plants were collected and identified according to Flora of Libya by Ali & Jafri (1977), El-Gadi (1988-1990), Jafri & El-Gadi (1977-1986) and Qaiser & El-Gadi, (1984); the study of Boulos (1975) of The mediterranean element in the flora of Libya and the Flora of Egypt by Boulos(1999). The plant collections were treated following the general Herbarium techniques pressing, poisoning and mounting then deposited in the Cyrenaica herbarium at the Botany Department at Garyounis University. Identifications were confirmed by comparison with dried specimens kept in Herbaria of Garyounis University (CHUG).

RESULTS AND DISCUSSION

The investigation revealed that the vegetation of Wadi El Ghattara consists of different species vary from annuals, which can escape from drought period, to perennials those have different strategies to avoid the extreme climatic conditions. Results indicated that Wadi El Ghattara has an abundance of wild plants. More than 250 species were collected from the study area belonging to 162 genera and 50 families of 50 families. This information could

eventually aid in interpreting changes in populations due to man-made alterations. Asteraceae, Poaceae, Fabaceae, Chenopodiaceae, Brassicaceae and Apiaceae are considered to be the largest families in respect to the number of their species.

The checklist's family sequence started with gymnosperms followed by the monocots and then the dicots. Genera and species are arranged alphabetically within each family as Brullo & Furnari (1979) and Prantle (1891).

Group I. Gymnosperms

Families:

1- Cupressaceae

1. *Juniperus mphaenicea* L.

2- Ephedraceae

2. *Ephedra alata* Decne.

3- Pinaceae

3. *Pinus haloepensis* Mill.

Group II. Angiosperms

Sub group I. Monocots Families:

4- Amaryllidaceae

4. *Narcissus tazetta* L.

5 - Alliaceae

5. *Allium longanum* Pamp.

6. *A. orientale* Boiss.

7. *A. roseum* L.

6-Aracaceae

8. *Arum cyrenaicum* Hurby

7 -Liliaceae

9. *Androcymbium gramineum* (Cav.) Mc Bride

10. *Asparagus aphyllus* L.

11. *A. stipularis* Forsk.

12. *Asphodelus fistulosus* L.

13. *A. microcarpus* Salzm. Viv.

14. *Dipcadi serotinum* (L.) Medic.

15. *Ornithogalum tenuifolium* Guss.

8-Poaceae

16. *Aegilops kotschy* Boiss.

17. *Avena barbata* Pott ex Link

18. *A. sterilis* L.

19. *Briza maxima* L.

20. *Bromus rigidus* Roth

21. *Catapodium rigidum* (L.) C.E. Hubbard

22. *Cynosurus coloratus* Lehm. ex Steud.

23. *C. elegans* Desf.

24. *Desmazeria philistaea* ssp. *rhofsi* (Coss.) H. Scholz

25. *Gastridium ventricosum* (Gouan) Schinz et Thell.

26. *Hordeum marinum* ssp. *gussoneanum* (Parl.)Asch. et Graebner

27. *H. bulbosum* L.

28. *H. murinum* ssp. *leporinum* (Link) Arcang.

29. *Lamarckia aurea* (L.) Moench
30. *Lolium loliaceum* (Bory et Chaub.) Hand.-Mazz
31. *Lophochloa salzmannii* (Boiss.) H. Scholz
32. *Phalaris minor* Retz
33. *P. paradoxa* L.
34. *Poa bulbosa* L.
35. *P. sinaica* Steud.
36. *Setaria verticillata* (L.)P. Beauv.
37. *Sporobolus spicatus*(Vahl) Kunth
38. *Trisetaria macrochaeta* (Boiss.) Maire
39. *Vulpia bromoides* (L.) S.F.Gray
40. *V. ciliate* Dumort.
41. *V. gracilis* H. Scholz

Sub group II. Dicots Families:

9-Amaranthaceae

42. *Amaranthus albus* L.
43. *A. hybridus* L.
44. *A. viridis* L.

10-Anacardiaceae

45. *Rhus tripartita* (Ucria) Grande

11- Apiaceae

46. *Ammoides pusilla* (Brot.)Breist.
47. *Ammi majus* L.
48. *A. visnaga* (L.)Lam.
49. *Brachyapium dichotomum* (L.) Maire
50. *Bupleurum semicompositum* L.
51. *Eryngium campestre* L.
52. *Scandix australis* L.
53. *S. pecten-venevis* L.
54. *Torilis leptophylla* (L.) Reichb.
55. *T. tenella* (Del.) Reichb.

12- Asteraceae

56. *Achillea santolina* L.
57. *Amberboa libyca* (Viv.) Alavi
58. *Anacyclus clavatus* (Desf.) Pers.
59. *Anthemis secundiramea* Biv.
60. *Atractylis cancellata* L.
61. *Bellis sylvestris* Cyr. var. *cyrenaica* Beguinot
62. *Calendula arvensis* L.
63. *C. tripterocarpa* Rupr.
64. *Carduus getulus* Pomel
65. *Carlina sicula* Ten.
66. *Centaurea sphaerocephala* L.
67. *C. alexandrina* Delile
68. *C. aegialophila* Boiss & Heldr.
69. *Cichorium pumilum*
70. *Chamomilla aurea* (Loefl.)Gay ex Cosson & Kralik

71. *Chrysanthemum coronarium* L.
 72. *Crepis libyca* (Pamp.) Shabet
 73. *C. senecioides* Delile ssp. *senecioides* (Viv.) Alavi
 74. *C. senecioides* Delile ssp. *nudiflora* (Viv.) Alavi
 75. *Dittrichia viscosa* (L.)W.Greut. *Conyza canadensis* (L.)Cornq.
 76 er
 77. *Filago desertorum* Pomel
 78. *F. fuscescens* Pomel
 79. *Hedypnois cretica* (L.)Dum. Courset
 80 *Hyoseris scabra* L.
 81. *Hypochoeris achyrophorus* L.
 82. *Launaea nudicaulis* (L.)Hooker
 83. *Leontodon hispidulus* (Delile) Boiss
 84 *L. tuberosus* L.
 85. *Notobasis syriaca* (L.)Cass.
 86. *Onopordum espiniae* Cosson ex Bonnet
 87. *Pallenis spinosa* (L.)Cass
 88. *Phagnalon rupestre* (L.)DC
 89. *Picris asplenoides* L.
 90. *P. pauciflora* Willd.
 91. *Reichardia tingitana* (L.)Roth
 92. *Rhagadiolus stellatus* (L.)Gaertn
 93. *Senecio vulgaris* L.
 94. *S. leucanthemifolius* Poiret
 95. *Scorzonera undulate* Vahl
 96. *Urospermum dalechampii* (L.)Scop. ex F. W. Schmidt
 97. *U. picroides* (L.)Scop. ex F. W. Schmidt
 98. *Xanthium spinosum* L.
13-Brassicaceae
 99. *Biscutella didyma* L.
 100. *Capsella bursa-pastoris* (L.)Medik. var. *rubella* (Reut.)Rapin
 101. *Didesmum aegyptius* (L.)Desve.
 102. *Enarthrocarpus pterocarpus* (Pers.)Boiss.
 103. *Eruca longirostris* Uechtr
 104. *Matthiola tricuspidata* ssp. *Pseudoxyceras*
 105. *Matthiola tricuspidata* ssp. *pseudoxyceras* (Jafri)Conti
 106. *M. tricuspidata* ssp. *tricuspidata* (L.)R.Br.
 107. *Rapistrum rugosum* (L.)All.
 108. *Sinapis alba* L.
 109. *S. flexuosa* Poiret
 110. *S. pubescens* L.
14- Boraginaceae
 111. *Anchusa aegyptiaca* (L.)DC.
 112. *Arnebia decumbens* (Vent.) Coss.& Kral.
 113. *Cynoglossum cherifolium* L.
 114. *Echium angustifolium* Mill.
 115. *E. italicum* L.

116. *E. sabulicola* Pomel

117. *Heliotropium europaeum* L.

118. *H. hirsutissimum* Grauer

119. *Nonea viviani* DC.

120. *Onosma cyrenaicum* Durand & Barratte

15- Capparaceae

121. *Capparis spinosa* L.

16- Caryophyllaceae

122. *Cerastium glomeratum* Thuill.

123. *C. pumilum* Curtis

124. *Polycarpon tetraphyllum* (L.) L.

125. *Silene apetala* Willd.

126. *S. colorata* Poiret

127. *S. cyrenaica* Maire & Weiler

128. *S. gallica* L.

129. *S. tridentate* Desf.

130. *S. villosa* Forsk.

131. *S. viviani* Steud.

132. *Spergularia diandra* (Sart.&Guss.)Heldr.

133. *S. rubra* (L.) J.& C.Presl

17- Casalpiniaceae

134. *Ceratonia siliqua* L.

18- Chenopodiaceae

135. *Anabasis articulata* ssp. *articulate* (Forsk.) Moq.

136. *A. articulata* ssp. *sporopediorum* (Maire)Ozenda

137. *Beta vulgaris* L.

138. *Chenopodium ambrosioids* L.

139. *Hammada scoparia* L.

140. *Cistus salvifolius* L.

141. *Fumana laevis* (Cav.) Senner

142. *Helianthemum hirtum* (L.)Mill.

143. *H. salicifolium* (L.)Mill.

144. *H. stipulatum* (Forsk.)C.Chr.

19- Convolvulaceae

145. *Convolvulus althaeoides* L.

146. *C. humilus* Jacq.

147. *C. supinus* Coss. et Kral.

148. *Sedum hispanicum* L.

149. *Umbilicus rupestris* (Salisb.)Dandy

21- Cucurbitaceae

150 - *Bryonia cretica* L.

151. *Citrullus colocynthis* (L.)Schrad.

152. *Ecballium elaterium* (L.)A.Rich.

22- Dipsacaceae

153. *Scabiosa arenaria* Forskal

23- Euphorbiaceae

154. *Euphorbia bivonae* Steud.

155. *E. helioscopia* L.

156. *E. peplus* L.

24- Fabaceae

157. *Mercurialis annua* L.

158. *Anthyllis tetraphylla* L.

159. *Astragalus caprinus* ssp. *Lonigerus* (Desf.) Maire.

160. *A. hauarensis* Boiss

161. *A. sinaicus* Boiss

162. *Calicotome villosa* (Poir.) Link

163. *Lathyrus aphaca* L.

164. *Lotus cytisoides* L.

165. *L. halophilus* Boiss et Sprum

166. *L. ornithopodioides* L.

167. *Medicago coronate* (L.) Bart

168. *M. littoralis* Rohde ex Lois.

169. *M. lupulina* L.

170. *M. minima* (L.)Bart.

171. *M. truncatula* Gaertn.

172. *M. turbinata* (L.) All.

173. *Melilotus sulcotus* Desf.

174. *Onobrychis crista-galli* (L.)Lam.

175. *Psoralea bituminosa* L.

176. *Retama reatum* (Forsk.) Webb

177. *Scorpiurus muricatus* L.

178. *Tetragonolobus purpureus* Moench.

179. *Trifolium campestre* Schreb.

180. *T. dasyurum* C. Presl

181. *T. purpureum* Loiss

182. *T. scabrum* L.

183. *T. stellatum* L.

184. *T. tomentosum* L.

25- Fumariaceae

185. *Fumaria densiflora* DC.

186. *F. macrocarpa* Parl.

26- Geraniaceae

187. *Erodium hirtum* (Frorsk.)Will.

188. *E. malacoides* (L.) L' Herit.

189. *E. moschatum*(L.) L' Herit.

190. *E. neuradifolium* Delile

191. *Geranium brutium* Gasp.

192. *G. molle* L.

27- ILLecebraceae

193. *Herniaria cinerea* DC.

194. *H. glabra* Linn.

195. *H. hemistemon* J.Gay

196. *Paronychia Arabica* (Linn.) DC.

197. *P. argentea* Lamk.

28- Lamiaceae

198. *Marrubium alysson* L.
199. *M. vulgare* L.
200. *Micromeria graeca*
201. *M. Juliana* (L.) Benth. ex Reichenb
202. *M. nervosa* (Desf.) Benth.
203. *Phlomis floccose* D. Don
204. *Salvia lanigera* Poir.
205. *S. spinosa* L.
206. *S. verbenaca* L.
207. *Thymus capitatus* (L.) Hoffm. & Link

29- Linaceae

208. *Linum bienne* Mill

31- Malvaceae

209. *Malva nicaeensis* All.
210. *M. parviflora* L.
211. *M. sylvestris* L.

32- Oleaceae

212. *Olea euroaea* L.

33- Orobanchaceae

213. *Cistanche violacea* (Desf.) Beck.
214. *Orobanche versicolor* F. Schultz

34- Oxalidaceae

215. *Oxalis pes-caprae* Linn.

35- Papaveraceae

216. *Glaucium flavum* Crantz
217. *Papaver dubium* L.
218. *P. hybridum* L.
219. *P. rhoeas* var. *strigosum* Boenn.

36- Plantaginaceae

220. *Plantago lagopus* L.
221. *P. notate* Lag.
222. *P. ovata* Forskal
223. *P. phaeostoma* Boiss & Heldr.

37- Plumbaginaceae

224. *Limonium thouinii* (Viv.) O. Ktze

38- Polygonaceae

225. *Emex spinosus* (L.) Campd.
226. *Polygonum equisetiforme* Sibth. & Sm.
227. *P. maritimum* L.
228. *Rumex bucephalophorus* L.

39- Primulaceae

229. *Anagallis arvensis* var. *caerulea* (L.) Gouan

230. *Cyclamen rohlfsianum* Aschers.

40- Ranunculaceae

231. *Adonis dentata* Delile
232. *A. microcarpa* DC.

233. *Ranunculus asiaticus* L.

41- Resedaceae

234. *Reseda lutea* ssp. *petrovichiana* (Muell.-Arg.)Jafri

42- Rosaceae

235. *Sarcopoterium spinosum* (L.)Spach

43-Rubiaceae

236. *Galium aparine* L.

237. *Sherardia arvensis* L.

44-Scrophulariaceae

238. *Linaria virgata* (Poir) Desf.

239. *Scrophularia canina* L.

45- Solanaceae

240. *Datura innoxia* Mill.

241. *Lycium europaeum* L.

242. *schweinfurthii* Dammer L.

243. *Nicotiana glauca* R.C.Graham

46- Theligonaceae

244. *Theligonum cynocrambe* L.

47- Urticaceae

245. *Urtica dioica* L.

246. *U. pilulifera* L.

48- Valerianaceae

247. *Fedia caput-bovis* Pomel.

248. *Valerianella petrovichii* Asherson

49- Verbenaceae

249. *Verbena supina* L.

50- Zygophyllaceae

250. *Fagonia cretica* L.

CONCLUSION

The investigation indicated that Wadi El Ghattara has an abundance of wild plants. More than 250 species were collected from the study area belonging to 162 genera and 50 families of 50 families. This information could eventually aid in interpreting changes in populations due to man-made alterations. Asteraceae, Poaceae, Fabaceae, Chenopodiaceae, Brassicaceae and Apiaceae are considered to be the largest families in respect to the number of their species.

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