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Recent vegetations biodiversity in Nile Delta wetlands in Egypt

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Aquatic plants are an integral part of a lake and its aging process. Many of the threats to fresh waters such as, climate change and eutrophication will result in reduced macrophyte diversity and will, in turn, threaten the faunal diversity of aquatic ecosystems and favour the establishment of exotic species, at the expense of native species. Lake Maryout aquatic macrophytes recorded in summer and autumn 2012, winter and spring 2013, were low diversity, indicating continuous pollution hazards. In spite of such situation, a new submerged macrophyte, *P. pusillus*, was recorded for the first time in Lake Maryout along the project period (2009-2013), and probably not recorded previously, according to the available literatures. Other submerged vegetations which withstand pollution such as; *Cabomba caroliniana* and *N. flexilis*, in addition to water cress *Pistia stratiotes*, all were observed in different seasons but not often. Lake Burullus, known to be a protectorate in Ramsar sites list, is becoming seriously endangers more than the other north Nile Delta lakes. The results of summer-autumn seasons 2012, and winter-spring 2013 at Lake Burullus, indicated the disappearance of macrophytes diversity that is characterizing international Ramsar sites list. Thus, pollution indicators were recorded in almost all stations under investigation such as, *Potamogeton pectinatus*. *Eichhornia* is known to resist high pollution stress, recorded during the whole year round 2012-2013 investigation. Close to the drains El-Serou and Faraskour, places known also, for the diverse submerged vegetations, *Najas marina*, *Potamogeton* (dominated) and *Echinochloa stagnina* appeared in summer, autumn 2012 and spring 2013. At Edku Lake, Stations situated in front of fish aquaculture drainage water, *Phragmites* was recorded. The three forms of aquatic macrophytes were shown, along the period of investigation 2012-2013, such as free-floating (water hyacinths); submerged (*Potamogeton* and *Ceratophyllum demersum* and *Cabomba caroliniana*) and emergent (*Scirpus maritimus*), in addition to the emergent *Polygonum amphibium*, in autumn 2012. At Bardawil Lagoon (Ramsar Site), the green macroalga *Caulerpa taxifolia* was recorded at El-Zaranik station, for the first time in Lake Bardawil history. Probably it was introduced from the Mediterranean through Boughaz opening. Generally plants biodiversity was very poor in summer 2012 in all stations under investigations. Different aquatic plants such as the red macroalga *Nemalion helminthoides* and eelgrass *Zostera marina* and *Cymodocea nodosa* were shown in some regions; in some others the invasive species green macroalga *Caulerpa prolifera* was dominant.

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