گزارش جدید گونه‌ای بارهنگ از تیره بارهنگیان برای فلور ایران
محمدرضا امیری، شهریار سعیدی مهرورز و فرشید معماریانی
دریافت: 24/12/1396 / ویرایش: 22/02/1397 / پذیرش: 04/06/1397 / انتشار: 30/09/1397

گروه زیست‌شناسی، دانشگاه علوم، دانشگاه گیلان، رشت، ایران
گروه پژوهشی گیاه‌شناسی، پژوهشگاه علوم گیاهی، دانشگاه فردوسی مشهد، مشهد، ایران

چکیده
Plantago lagocephala به عنوان یک گونه جدید برای فلور ایران از استان خراسان رضوی گزارش می‌گردد. این گونه با گونه‌های نزدیک حداکثر به آن از P. lachnantha، P. ciliata و P. psammophila مقایسه شده است. علاوه بر این، ویژگی‌های ریخت‌شناسی منحصر بفرد و نقشه پراکنش نیز ارائه شده است. وضعیت حفاظتی گزارش جدید براساس رده‌بندی و معیارهای IUCN ارزیابی شده است.

واژه‌های کلیدی: خراسان، ریخت‌شناسی، گونه‌های خویشاوند، نقشه پراکنش، وضعیت حفاظتی

Plantago lagocephala (Plantaginaceae), a new record for the flora of Iran
Mohammad Sadegh Amiri1, Shahryar Saeidi Mehrvarz1*, Farshid Memariani2
Received: 15.03.2018 / Revised: 12.05.2018 / Accepted: 26.08.2018 / Published: 21.12.2018

1 Department of Biology, Faculty of Science, University of Guilan, Rasht, Iran
2 Department of Botany, Research Center for Plant Sciences, Ferdowsi University of Mashhad, Mashhad, Iran
* Correspondent author: saeidimz@guilan.ac.ir

Abstract. Plantago lagocephala is recorded as a new species for the flora of Iran from Razavi Khorassan Province. It is compared with the closely related species including P. lachnantha, P. ciliata and P. psammophila. Moreover, the diagnostic morphological characters and a distribution map are provided. The conservation status of the new record is evaluated based on the IUCN red list categories and criteria.

Keywords. conservation status, distribution map, Khorassan, morphology, related species

INTRODUCTION
Plantago L. (Plantaginaceae) comprises nearly 250 species in the world and its main centers of diversity are located in the temperate zone and also in high-elevations of the tropical regions, ranging from cosmopolitan weeds to extremely narrow endemics (Pilger, 1937; Rahn, 1996; Hassemer, 2016). The morphology and taxonomy of this genus are complex, and still present uncertainties regarding its phylogenetic relationships and species delimitations (Hassemer, 2016). It encompasses 28 species in the Flora Iranica area and 24 species in Iran, of which 5 species are endemics (Patzak & Rechinger, 1965; Mozaffarian, 2007; Mohsenvazdeh et al., 2007, 2010; Hassemer, 2018). Although botanists have visited most parts of Iran, some areas are unexplored yet. During the field investigations in the mountains of Zarrin Kuh Protected Area (ZPA), Razavi Khorassan Province (NE Iran) we found some peculiar populations of a Plantago species. A closer study of living material and herbarium specimens suggested that the specimens were similar to P. lachnantha Bunge, P. ciliata Desf. and P. psammophila Agnew & Chal.-Kabi.
However, there were also several morphological differences. After examining the specimens carefully, they were identified to be a new record for the genus, namely *Plantago lagocephala* Bunge for the flora of Iran. Morphological features (i.e. leaf shape and the length of spike peduncle, bracts and corolla lobes) in this taxon are good characters for the separation of these closely related species (Table 1). In this paper, the diagnostic characters of this taxon, its distribution map and its conservation status, based on the IUCN Red list categories, are discussed.

**MATERIALS AND METHODS**

The herbarium specimens were collected from Zarrin Kuh Protected Area in Razavi Khorassan Province, NE Iran during 2015-2017 in flowering and fruiting periods. The vegetative and reproductive characteristics of the specimens were studied by means of a stereomicroscope. Descriptions of the new record and its close relatives were compared using the relevant Flora, especially the Flora Iranica (Patzak & Rechinger, 1965). The plant specimens are deposited in the herbarium of the Ferdowsi University of Mashhad (FUMH). The International Plant Names Index (http://ipni.org) was consulted for the standard scientific and author names of the plant species.
### RESULTS AND DISCUSSION


Annual herbs, small to 8-10 cm tall. Leaves rosettes, erect, papery, 2-5 cm long, 2-5 mm broad, narrow-lanceolate, obtuse. Spike peduncle 4-8 cm long, arcuate-ascendent, villose. Spikes dense, ovoid, 8 mm long in flower, later in fruits cylindrical, up to 20 mm long. The bracts broadly ovate, ciliate, up to 3 mm long, keeled. Sepals lanceolate-ovate, 3 mm long, keeled. Corolla tube glabrous; corolla lobes ovate, hairy, up to 1 mm long. Capsule ellipsoid; seeds 2, yellowish-brown, elliptic to narrow ovate-elliptic.

**Specimen seen:** Iran: Razavi Khorassan province, NW Dargaz, ca. 5 km NE Nokhandan, northern foothills of Zarrin Kuh Protected Area, 490-550 m, 26 April 2016, Joharchi & Memariani 45716 (FUMH).

**General distribution:** An Aralo-Caspian species distributed mainly in Kara-Kum, Kyzyl-Kum, and Amu-Darya (Turkmenistan, Kazakhstan, Uzbekistan, Tajikistan) (Shishkin, 1958), and also in N-NE Afghanistan (Baghlan and Bamian) (Podlech, 2012), Pakistan (Balochistan) (Patzak & Rechinger, 1965), China (N Xinjiang) (eFloras, 2018), and NE Iran (the present work).

**Habitat and ecology**  
*Plantago lagocephala* occurs in elevations ranging from 490 to 550 m, on the foothills of Zarrin Kuh. Biogeographically, the area belongs to the central part of Khorassan-Kopet Dagh floristic province. It grows on clay-gypsum and marl hills. The vegetation in such habitats is very sparse and usually species-poor. The carbonate-rich soil and gypsum, very dry substrate, and lack of organic material represent stressful conditions for many plant species. Therefore, highly specialized xerophilous species, known as gypsophilous or calciphilous species, grow on such soils (Memariani et al., 2016). The following taxa exist abundantly in its locality: *Galium tricornutum* Dandy, *Zygophyllum atriplicoides* Fisch. & C. A. Mey., *Cephalaria turcomanica* Popov, *Heterocaryum szovitsianum* (Fisch. & C.A.Mey.) A.DC., *Valerianella dufresnia* Nyman, *Gypsophila heteropoda* Freyn & Sint. and *Alyssum desertorum* Stapf.

**Conservation status**  
This species was very rare in the area and was found only in a few localities, where its habitat had recently been greatly affected by road construction and intensive grazing. Concerning the small extent of occurrence and the low number of *P. lagocephala* in this area, the recommended IUCN Red category of this species is evaluated as regionally Critically Endangered (CR).

### ACKNOWLEDGEMENT

This paper is a part of the results of the Ph.D. thesis of the first author supported by the University of Guilan. The authors are thankful for the financial support of this University. We are also indebted to M.R. Joharchi (FUMH) for his valuable advice and constructive comments during the identification of the species.
REFERENCES


How to cite this article: