



Railway network as a pathway for the introduction and spread of alien plant species in Southern Bulgaria



Gergana Karaycheva,¹ Vladimir Vladimirov²

¹Agricultural University Plovdiv, 12 Mendelev bul. Bulgaria, 4000

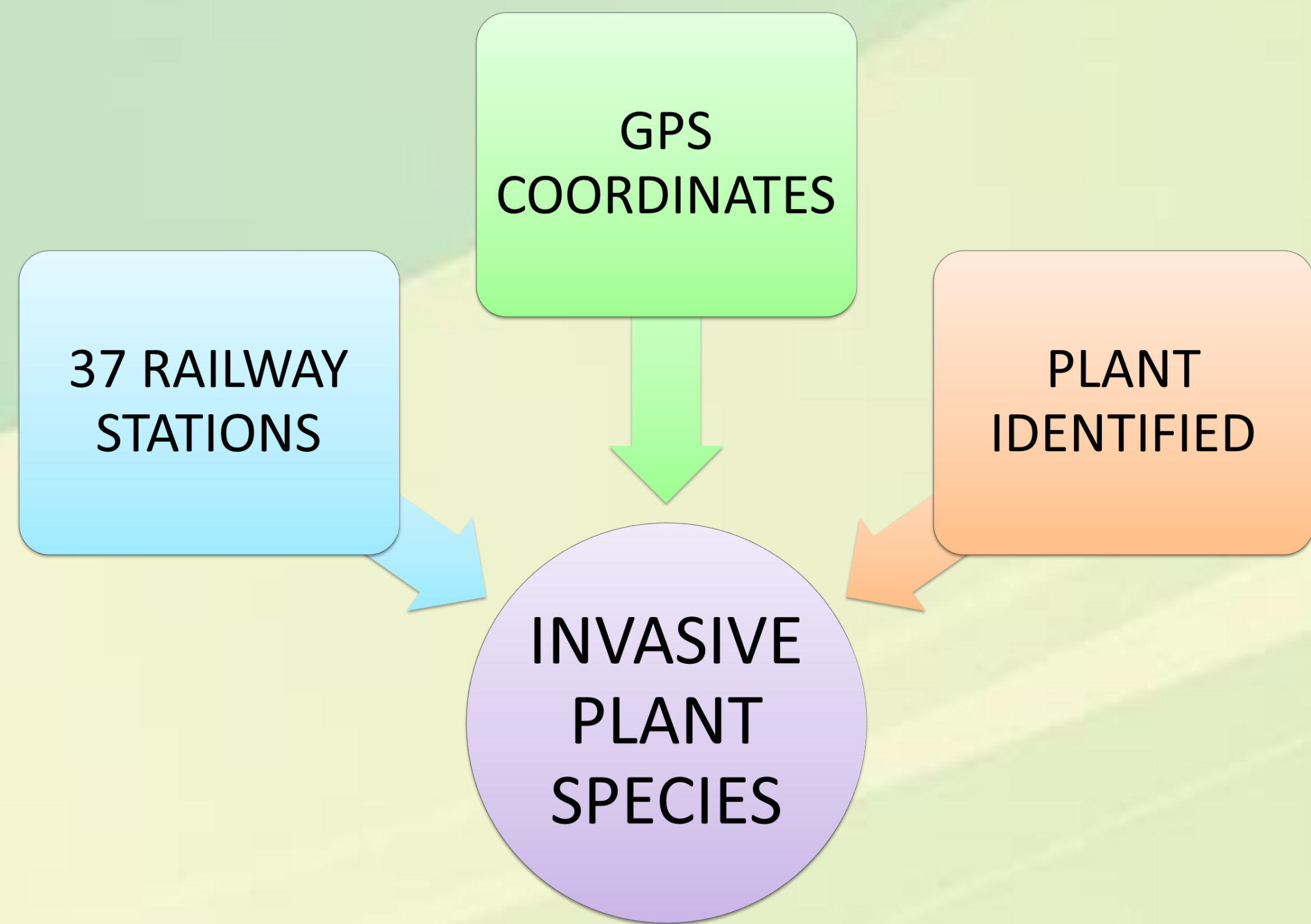
²Institute of Biodiversity and Ecosystem Research Bulgarian Academy of Sciences, Sofia, Akad. Georgi Bonchev St., bl. 23, Bulgaria, 1113

Abstract

The railway network is one of the routes for the entry and spread of alien plant species. The areas around the stations were one of their first habitats, from where they subsequently migrate and enter semi-natural and natural habitats.

The purpose of the present study is to determine the plant species distributed around 37 railway stations in southern Bulgaria. Through the field study of the selected stations, the plant taxa distributed along the railway network were inventoried.

Materials and method



Results

- The study identified 399 plant species from Magnoliophyta;
- The invasive plants were 43 taxa;

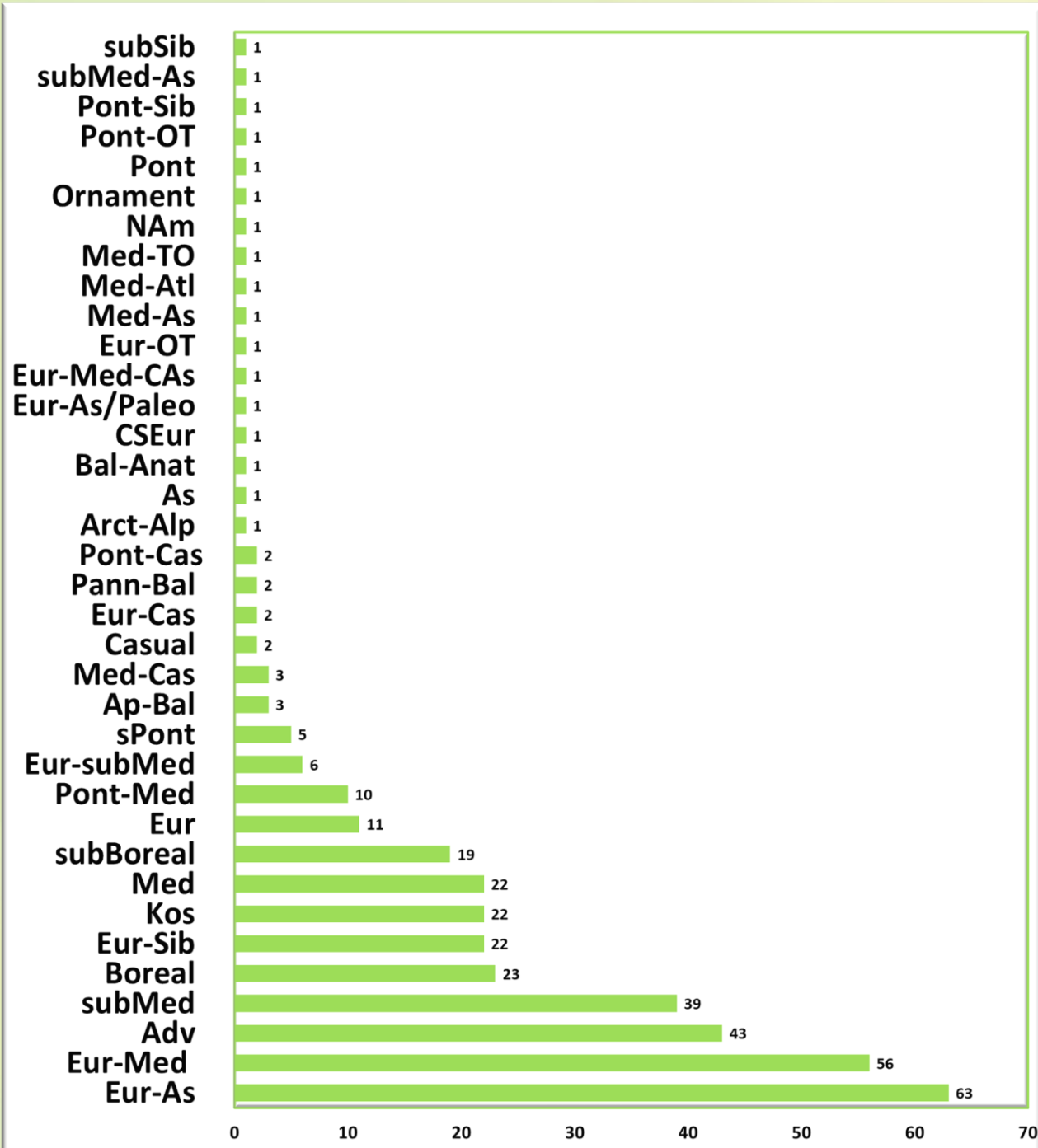


Fig. 1. Distribution by floral elements

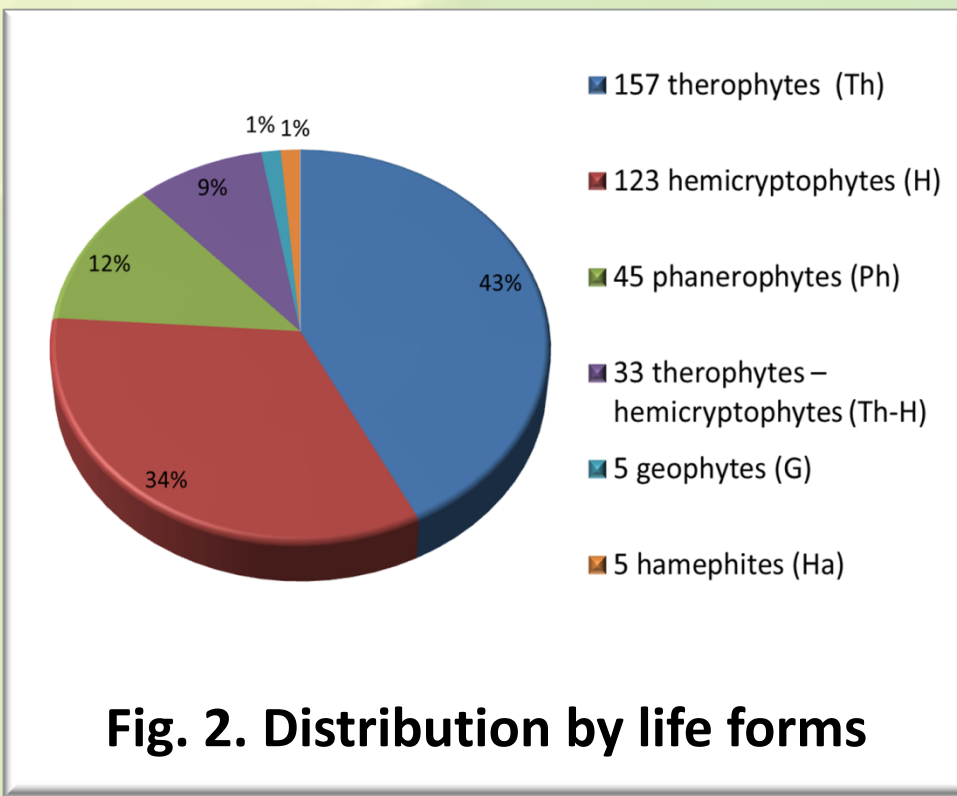


Fig. 2. Distribution by life forms

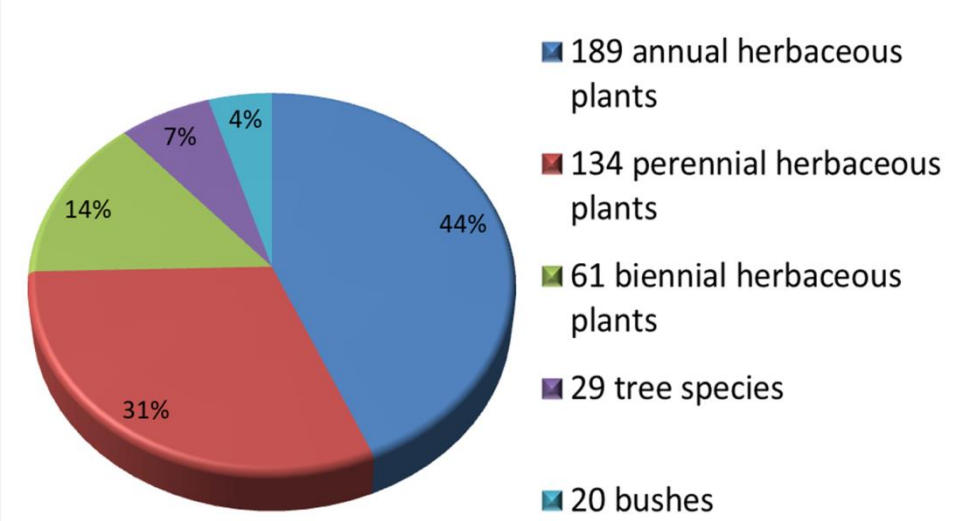


Fig. 3. Distribution by biological type

TAXON	FAMILIE	BIOLOGICAL TYPE	LIFE FORMS	NATIVITY	Asenovgrad	Bankya	Blagoevgrad	Belovo	Burgas V. Pavlov	Burgas central	Vladaya	Voluyak	Dimitrograd	Dobrinishte	Dupnitsa
<i>Acer negundo</i> L.	Sapindaceae	T	Ph	North America	1	1	1			1					1
<i>Ailanthus altissima</i> (Mill.) Swingle	Simaroubaceae	T	Ph	China	1	1	1	1	1	1	1				1
<i>Amaranthus albus</i> L.	Amaranthaceae	A	Th	Central America	1				1	1		1	1	1	1
<i>Amaranthus deflexus</i> L.	Amaranthaceae	A	Th	South America											
<i>Amaranthus retroflexus</i> L.	Amaranthaceae	A	Th	North America		1	1	1	1	1					1
<i>Ambrosia artemisiifolia</i> L.	Asteraceae	P	Th	North America								1			1
<i>Amorpha fruticosa</i> L.	Fabaceae	Sh	Ph	Central and South America											1
<i>Bidens frondosa</i> L.	Asteraceae	A	Th	North America									1		
<i>Cuscuta campestris</i> Yunck.	Convolvulaceae	A	Th	North America			1								
<i>Datura stramonium</i> L.	Solanaceae	A	Th	America				1	1	1					
<i>Erigeron annuus</i> (L.) Pers.	Asteraceae	A-P	Th-H	North America		1							1		
<i>Erigeron canadensis</i> L.	Asteraceae	A-B	Th	North America	1	1	1	1	1	1	1	1	1	1	1
<i>Erigeron sumatrensis</i> Retz.	Asteraceae	A-B	H	South America						1					
<i>Euphorbia maculata</i> L.	Euphorbiaceae	A	Th	North America	1	1	1	1			1	1			1
<i>Euphorbia prostrata</i> Aiton	Euphorbiaceae	A	Th	Central America					1	1					
<i>Morus alba</i> L.	Moraceae	T	Ph	China, Japan			1								1
<i>Oxalis stricta</i> L.	Oxalidaceae	P	H	North America		1									
<i>Phytolacca americana</i> L.	Phytolaccaceae	P	Ph	North America				1							1
<i>Portulaca grandiflora</i> Hook.	Portulacaceae	A	Th	South America											
<i>Portulaca oleraceae</i> L.	Portulacaceae	A	Th	Mediterranean	1	1	1	1	1	1	1	1	1	1	1
<i>Senecio inaequidens</i> DC.	Asteraceae	P	H	North America								1			
<i>Xanthium spinosum</i> L.	Asteraceae	A	Th	South America											

Conclusion

The alien species were found at stations as follows: (1) where had intensive traffic; (2) where had abandoned wagons and unmaintained terrain. Generally, the high parts of adventive species confirmed that the railway network was one of the corridors for their settlement in the Bulgarian flora. The results of this study going to the base for monitoring and developing measures to control of alien species.