

# **Status of Ecosystem Services in Abandoned Mining Areas in the Iberian Peninsula: Management Proposal**

**María González-Morales, M<sup>a</sup> Ángeles Rodríguez-González and Luis Fernández-Pozo \***

Environmental Resources Analysis (ARAM) Research Group, University of Extremadura, 06006 Badajoz, Spain

\* Correspondence: [luferpo@unex.es](mailto:luferpo@unex.es)

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## 1. Figures



**Figure S1.** Mining sludge platform.



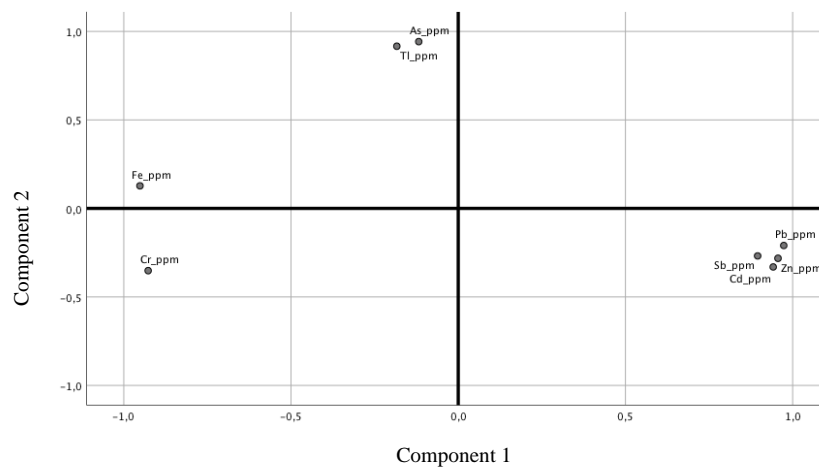
**Figure S2.** Mining sludge.



**Figure S3.** Buildings.



**Figure S4.** Dump.



**Figure S5.** Rotated component chart.

## 2. Tables

**Table S1.** Diseases and/or disorders caused by metal(loid)s in humans.

Metal(loid)	Diseases/Disorders	References
As	Cardiovascular and respiratory diseases, tumor processes, immune dysfunction, liver disorders.	[16]
Cd	Respiratory, gastrointestinal diseases, kidney and bone disorders, potentially tumorous.	[17]
Co	Cardiovascular, pulmonary, endocrine, neurological, potentially tumor diseases.	[18]
Cr	Digestive tract ulceration, allergic reactions, tumor processes.	[19]
Hg	It affects the nervous system, respiratory diseases, cardiac and gastric alterations.	[20]
Ni	Epithelial irritations and inflammations, pulmonary, haematological, renal and gastric diseases, tumor processes.	[21]
Pb	Haematological, neuronal, skeletal diseases, development in children, tumor processes.	[22]
Sb	Respiratory, cardiovascular and/or gastrointestinal diseases.	[23]
Se	Respiratory, cardiovascular, gastrointestinal and/or motor diseases.	[24]
Tl	Affects lungs, kidneys, heart, liver, reproductive disorders and nervous system.	[25]
Zn	Respiratory problems, digestive tract disorders, behavioural disturbances; tumor processes.	[26]

**Table S2.** Soil analysis.

	Eh (mV)	Ca (Cmol/kg)	Mg (Cmol/kg)	Na (Cmol/kg)	K (Cmol/kg)	Arena (%)	Arcilla (%)	Limo (%)
Mining	318.2	2.33	0.71	0.22	0.21	35.21	7.54	57.25
sludge	±7.7	±0.71	±0.36	±0.9	±0.04	±12.07	±1.77	±10.53
Shrubland	326.9	4.60	1.12	0.17	0.26	47.36	7.53	45.11
	±4.9	±1.44	±0.46	±0.07	±0.09	±4.66	±1.35	±4.36
Riparian	303.8	6.57	1.80±	0.17	0.31	55.97	4.96	39.07
	±47.0	±2.38	0.82	±0.07	±0.13	±11.69	±2.12	±10.65
Dehesa	340.2	5.62	1.63	0.20	0.27	56.49	7.85	35.66
	±61.5	±2.01	±0.76	±0.09	±0.12	±8.94	±2.13	±9.44
Control	220.1	9.26	2.79	0.09	0.15	73.95	8.75	17.30
	±32.5	±1.39	±0.68	±0.01	±0.03	±1.89	±0.65	±1.16

**Table S3.** Correlation matrix <sup>a,b</sup>

	As	Pb	Sb	Tl	Zn	Cr	Fe	Cd
As	1,000	-,340	-,404	,781	-,363	-,210	,166	-,431
Pb	-,340	1,000	,949	-,338	,983	-,829	-,929	,990
Sb	-,404	,949	1,000	-,321	,904	-,701	-,797	,953
Tl	,781	-,338	-,321	1,000	-,458	-,149	,385	-,461
Zn	-,363	,983	,904	-,458	1,000	-,793	-,968	,989
Cr	-,210	-,829	-,701	-,149	-,793	1,000	,851	-,751
Fe	,166	-,929	-,797	,385	-,968	,851	1,000	,923
Cd	-,431	,990	,953	,461	,989	,751	,923	1,000

a. Determinant = ,000

b. This matrix is not certain positive

**Table S4.** Component matrix <sup>a</sup>

	Component	
	1	2
<b>Cd</b>	,998	
<b>Zn</b>	,997	
<b>Pb</b>	,992	
<b>Fe</b>	-,947	-,161
<b>Sb</b>	,934	
<b>Cr</b>	-,781	-,611
<b>As</b>	-,393	,865
<b>Tl</b>	-,448	,820

Extraction method: Principal Component Analysis

a. 2 components extracted.

**Table S5.** Component matrix rotated.

	Component	
	1	2
<b>Pb</b>	,973	-,210
<b>Zn</b>	,956	-,282
<b>Fe</b>	-,952	,128
<b>Cd</b>	,942	-,331
<b>Cr</b>	-,927	-,351
<b>Sb</b>	,895	-,268
<b>As</b>	-,118	,942
<b>Tl</b>	-,184	,916

Extraction method: Principal Component Analysis

Rotation method: Varimax with Kaiser normalization

a. The rotation converged in 3 iterations.