C3.5a Periodically exposed shore with stable, eutrophic sediments with pioneer or ephemeral vegetation

Summary

This habitat type occurs throughout lowland Europe on the periodically exposed shores of rivers or islets of accumulated sediment in river channels, drying-out oxbows, lakes and fishponds, ditches and flooded arable land. The soils are muddy or sandy-muddy, usually with a high concentration of nutrients from natural sedimentation or from human input, and the vegetation is dominated by annual nitrophiles or, in the Mediterranean refion, also including amphibious stoloniferous perennials. Depending on the successional stage, soil nutrient status and the speed of the draw-down the vegetation can be short and open, or very dense and tall. The stands are usually species-poor, often with a single dominant species, but can be also species-rich, especially in open, frequently disturbed stands on river shores. Major pressures are related to the transformation of the hydrological conditions and water polllution and restoration is closely related to the recovery of natural hydrology and to management of water quality.

Synthesis

The habitat type is assessed as Near Threatened (NT) due to large declines in quality (criteria C/D1) over the last 50 years. This is accompanied by a reduction of about 14% in area, a trend that does not lead to any threatened category.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Near Threatened	C/D1	Near Threatened	C/D1

Sub-habitat types that may require further examination

No sub-habitats have been distinguished for further analysis.

Habitat Type

Code and name

C3.5a Periodically exposed shore with stable, eutrophic sediments with pioneer or ephemeral vegetation

Vegetation of annual wetland herbs with *Rumex maritimus* on the exposed bottom of Nesyt fishpond in the southeastern Czech Republic (Photo: Milan Chytrý).

Vegetation dominated by *Xanthium orientale* subsp. *italicum* on exposed river banks, River Tiber, Italy (Photo: Flavia Landucci).

Habitat description

This habitat type includes periodically exposed shores of rivers or islets of accumulated sediment in river

channels, drying-out oxbows, lakes and fishponds. The same habitat conditions also occur in disturbed habitats strongly affected by humans such as ditches and other wet places in villages or shallowly inundated and drying out arable land. However these anthropogenic habitats represents degradations of other habitat types and therefore do not deserve protection. Soils are muddy or sandy-muddy, usually with a high concentration of nutrients from natural sedimentation or from human input, for example on arable land and near agricultural farms.

Vegetation growing in such environments is dominated by annual herbs, mainly of the genera *Bidens, Chenopodium* and *Persicaria.* In the Mediterranean areas where the drying out is more rapid the vegetation in the same habitat can be dominated also by perennial stoloniferous species tolerant to prolonged flooding such as *Cynodon dactylon, Polypogon viridis, Panicum repens, Paspalum* spp*.* Depending on the successional stage, soil nutrient status and the speed of the draw-down the vegetation can be short and open, or very dense and up to 1.5 m tall (especially if dominated by annual plants of the class *Bidentetea*). The stands are usually species-poor, often with a single dominant species, but can be also species-rich, especially in open, frequently disturbed stands on river shores.

In contrast to habitat C3.5b, this habitat occurs in environments with quick draw-down and drying out, or on more nutrient-rich sediments. In environments with slower draw-down, low-growing vegetation belonging to C3.5b can appear first and develop into tall-growing stands of C3.5a in a later successional stage.

Indicators of good quality:

- Occurrence in natural environments such as shores of unregulated rivers or natural lakes
- Occurrence of rare wetland species
- Low incidence of neophytes
- Low occurrence of shrubs

Characteristic species:

Flora

Vascular plants: *Alopecurus aequalis, Bidens cernuus, B. radiatus, B. tripartitus, Corrigiola littoralis, Echinochloa spp., Oxybasis chenopodioides (syn. Chenopodium chenopodioides), O. glauca (syn. Chenopodium glaucum), O. rubra (syn. Chenopodium rubrum), Persicaria dubia, P. foliosa, P. hydropiper, P. lapathifolia, P. minor, Potentilla supina, Pulicaria vulgaris, Cyperus distachyos, Cyperus fuscus, Cynodon dactylon, Polypogon viridis, Panicum repens, Ranunculus sceleratus, Rumex maritimus, Tephroseris palustris, Xanthium orientale* subsp. *italicum, Sisymbrium supinum.*

Exotic species naturalized: *Abutilon theophrasti, Bidens connatus, B. frondosus, Paspalum dilatatum, P. disticum, Aster squamatus, Ludwigia peploides, Ludwigia grandiflora, Amorpha fruticosa.*

Fauna

It can be used by pond terrapins for sun-bath (hermoregulation) during Summer

Birds: Ardeids (feeding grounds when flooded), breeding habitat *Sterna albifrons, Sterna hirundo, Charadrius dubius,* ducks

Insects: Insects present during the drawdown phase with e.g. Scarabidae (*Hoplia caerulea*) and Orthoptera (*Tetrix spp*)

Classification

This habitat may be equivalent to, or broader than, or narrower than the habitats or ecosystems in the following typologies.

Annex 1:

3270 Rivers with muddy banks with Chenopodion rubri p. p. and Bidention p. p. vegetation;

3280 Constantly flowing Mediterranean rivers of the Paspalo-Agrostidion species and hanging curtains of Salix and Populus alba

3290 Intermittently flowing Mediterranean rivers of the Paspalo-Agrostidion;

EuroVegChecklist (alliances):

Bidention tripartitae Nordhagen ex Klika et Hadac 1944

Chenopodion rubri (Tx. in Poli et J. Tx. 1960) Hilbig et Jage 1972

Paspalo-Agrostion semiverticillati Br.-Bl. in Br.-Bl. et al. 1952

Emerald:

--

MAES-2:

Rivers and lakes

IUCN:

5.6. Seasonal/Intermittent Freshwater Lakes [over 8 ha]

5.8. Seasonal/Intermittent Freshwater Marshes/Pools [under 8 ha]

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?
No

Justification
This habitat is widespread in EU.

Geographic occurrence and trends

EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Austria	Present	50 Km^2	Decreasing	Decreasing
Belgium	Present	Unknown Km^2	Increasing	Unknown
Bulgaria	Present	21 Km^2	Decreasing	Decreasing
Croatia	Present	10 Km^2	Increasing	Decreasing
Cyprus	Uncertain	Km^2	-	-
Czech Republic	Present	0.8 Km^2	Decreasing	Decreasing
Denmark	Uncertain	Km^2	-	-
Estonia	Present	1 Km^2	-	-
Finland	Finland mainland: Present	Unknown Km^2	Decreasing	Decreasing
France	France mainland: Present	100 Km^2	Decreasing	Decreasing
Germany	Present	Unknown Km^2	Increasing	Decreasing

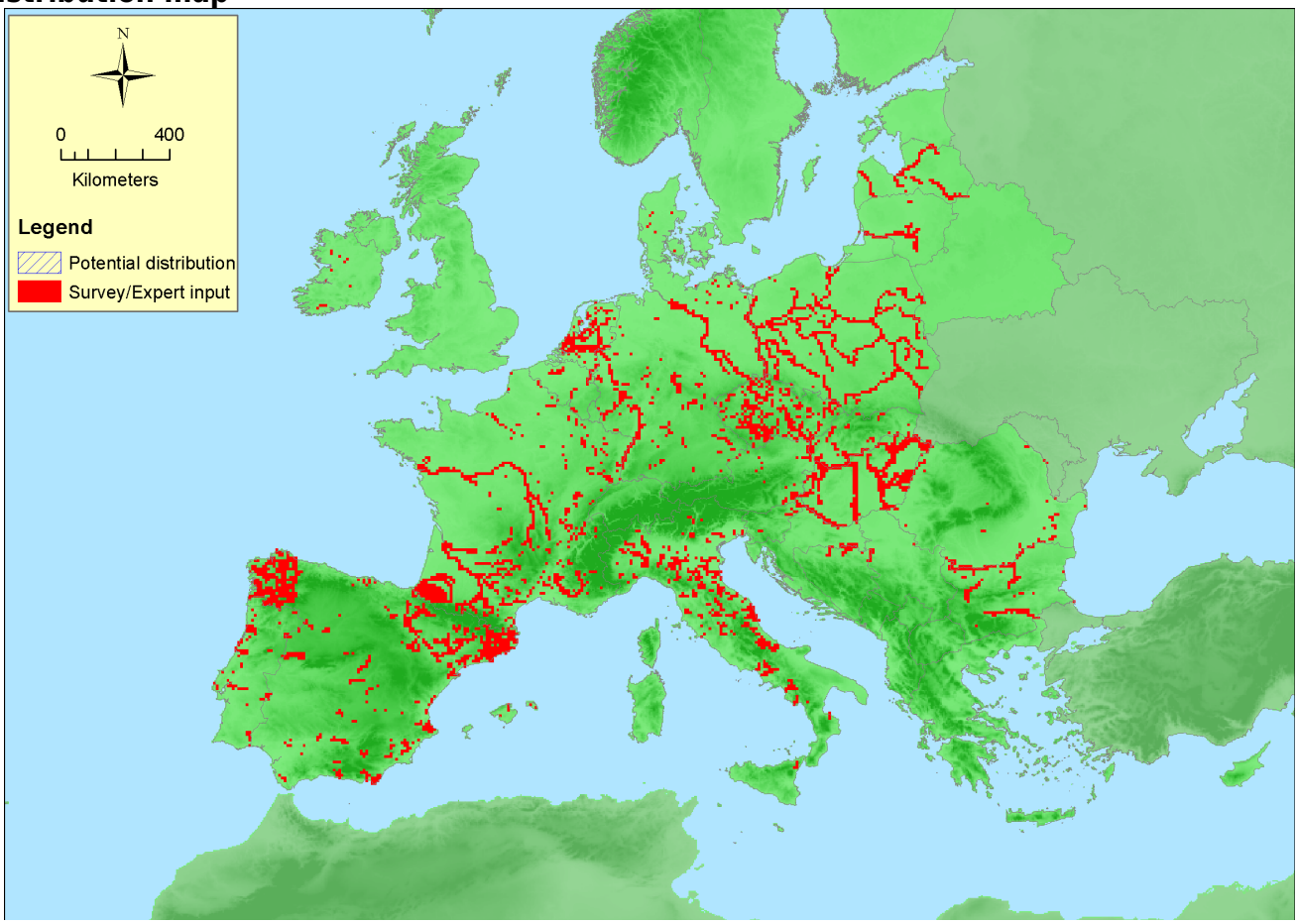
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Greece	Crete: Uncertain East Aegean: Uncertain Greece (mainland and other islands): Uncertain	Km^2	-	-
Hungary	Present	30 Km^2	Stable	Decreasing
Ireland	Present	1.2 Km^2	Stable	Stable
Italy	Italy mainland: Present Sicily: Present	86 Km^2	Decreasing	Decreasing
Latvia	Uncertain	Km^2	-	-
Lithuania	Present	0.9 Km^2	Unknown	Unknown
Luxembourg	Uncertain	Km^2	-	-
Malta	Uncertain	Km^2	-	-
Netherlands	Present	2.3 Km^2	Decreasing	Stable
Poland	Uncertain	Km^2	-	-
Portugal	Portugal mainland: Uncertain	Km^2	-	-
Romania	Present	90 Km^2	Increasing	Decreasing
Slovakia	Present	4 Km^2	Decreasing	Decreasing
Slovenia	Present	5.2 Km^2	Increasing	Decreasing
Spain	Spain mainland: Present	30 Km^2	Increasing	Stable
Sweden	Present	unknown Km^2	Unknown	Unknown
UK	Northern Island: Uncertain United Kingdom: Present	unknown Km^2	Unknown	Unknown

EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Albania	Present	20 Km^2	Increasing	Decreasing
Bosnia and Herzegovina	Present	5 Km^2	Decreasing	Decreasing
Former Yugoslavian Republic of Macedonia (FYROM)	Uncertain	Km^2	-	-
Kaliningrad	Uncertain	Km^2	-	-
Kosovo	Uncertain	Km^2	-	-
Montenegro	Uncertain	Km^2	-	-
Serbia	Uncertain	Km^2	-	-
Switzerland	Present	1,5 Km^2	Decreasing	Decreasing

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	5801250 Km^2	3833	425 Km^2	
EU 28+	5801250 Km^2	3867	430 Km^2	

Distribution map



Map is rather complete for EU28, but incomplete for EU28+, especially in the Balkan. Data sources: Art17, EVA, NAT.

How much of the current distribution of the habitat type lies within the EU 28?

Probably, less than one third of the current distribution of the habitat-type lies within the EU 28.

Trends in quantity

Present past trend in quantity is estimated trend in 14,2%. The data are based on eleven EU28 countries and three EU28+ countries. Future trend is mostly unknown but when estimated it is mostly as decreasing. Long historical trend in quantity is mostly unknown but when it is known it is higher than 50%.

- Average current trend in quantity (extent)
  EU 28: Decreasing
  EU 28+: Decreasing
- Does the habitat type have a small natural range following regression?
  No
  Justification
  A reduction in extent has been reported but the overall range is probably stable.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  The habitat is widespread through Europe.

Trends in quality

The extent of degradation is 32% from both EU 28 and EU28+ countries. The severity of degradation is

58% in the EU28 and 59% in the EU28+. The trends have been calculated from the reported trends in quality (extent and severity) by Austria, Bulgaria, Croatia, France, Hungary, Ireland, Italy (NO Sar, Sic), Netherlands, Romania, Slovenia, Spain, Albania, Bosnia and Herzegovina, and Switzerland. No estimated future trend is provided for most of the countries. Long historical trend in quantity is also mostly unknown.

- Average current trend in quality
  EU 28: Decreasing
  EU 28+: Decreasing

Pressures and threats

In Europe, human induced changes in hydraulic conditions are the threat most extended which include landfill and land reclamation, canalisation, dykes, flooding modifications and management of aquatic and bank vegetation for drainage purposes. Other important causes of the threats affecting this habitat are water pollution and the occurence of invasive non-native plants. Other threats are related to agricultural activities (use of biocides, intensive grazing and abandonment of pastoral systems) and mining (sand and gravel extraction).

List of pressures and threats

Agriculture

Grazing
Intensive grazing
Use of biocides, hormones and chemicals

Mining, extraction of materials and energy production

Mining and quarrying
Sand and gravel extraction

Pollution

Pollution to surface waters (limnic, terrestrial, marine & brackish)

Invasive, other problematic species and genes

Invasive non-native species

Natural System modifications

Human induced changes in hydraulic conditions
Modification of hydrographic functioning, general

Conservation and management

The conservation and management of this habitat requires the existence of periodically exposed shores with stable sediments by maintaining the natural hydrographic conditions -occurence of unregulated rivers or natural lakes-. It is important to maintain also a low incidence of neophytes and occurence of shrubs.

List of conservation and management needs

No measures

No measures needed for the conservation of the habitat/species

Measures related to wetland, freshwater and coastal habitats

Other wetland related measures

Restoring/Improving the hydrological regime
Managing water abstraction

Conservation status

3270: ALP U1, ATL U2, BLS U1, BOR U1, CON U1, MED U2, PAN U1, STE FV

3280: ALP XX, CON XX, MED U1

3290: MED U1

When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

The habitat can easilly recover naturally its functionallity as soon as the modifications in river systems stop. If the severe damage is related to pollution, the habitat can be readily recovered when the water quality is restored.

Effort required

10 years	20 years
Through intervention	Through intervention

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	-14 %	unknown %	unknown %	unknown %
EU 28+	-14 %	unknown %	unknown %	unknown %

Overall an average trends of -14,2% from both EU28 and EU28+ countries over about 50 years were calculated. Information is based in 11 (EU28) and three (EU28+) countries. The habitat show the highest decreasing trends in central European countries such as Austria, Czech Republic and Slovakia but the larger extensions in France and Italy.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	50000 Km^2	-	-		50	-	-		
EU 28+	50000 Km^2	-	-		50	-	-		

The EOO, AOO and number of locations are far beyond the thresholds for critera under B, and therefore subcriteria for B have not been assessed.

Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	32 %	58 %	unknown %	unknown %	unknown %	unknown %
EU 28+	32 %	59 %	unknown %	unknown %	unknown %	unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown%	unknown %	unknown%	unknown %	unknown%
EU 28+	unknown %	unknown%	unknown %	unknown%	unknown %	unknown%

The overall extent and severity are the weighted average calculated from reported data from 11 EU28 and three EU28+ countries. On average there is a decrease in quality affecting 32% of the surface with an average severity of 58% (EU28) and 59 (EU28+). These values lead to the category Near Threatened (NT). Most of the involved countries could not provide any information on long historical or future trends in quality (CD2, CD3, C2, C3, and D2). The changes in quality are both abiotic (waste, trampling) and biotic (invasive species, changes in species composition), so C/D1 has not been split into C1 and D1.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	Unknown
EU 28+	Unknown

There is no quantitative analysis available that estimates the probability of collapse of this habitat type.

Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	LC	DD	DD	DD	LC	LC	LC	NT	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	DD	DD	DD	LC	LC	LC	NT	DD	DD	DD	DD	DD	DD	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Near Threatened	C/D1	Near Threatened	C/D1

Confidence in the assessment

Medium (evenly split between quantitative data/literature and uncertain data sources and assured expert knowledge)

Assessors

J.A. Molina

Contributors

Habitat definition: Milan Chytrý

Territorial data: D. Paternoster, D. Paelinckx, J.M. Couvreur, R. Tzonev, Škvorc, K. Šumberová, H. Mäemets, T. Kontula, A. Mikolajczak, A. Ssymank, P. Finck, U. Raths, U. Riecken, Z. Molnár, J. Brophy, E. Agrillo, F. Attorre, S. Armiraglio, S. Assini, G. Buffa, L. Casella, C. Giancola, G. Giusso Del Galdo, D. Gigante, C.

Marcenò, G. Pezzi, D. Viciani, V. Rašomavičius, E. Weeda, J. Janssen, C. Bita-Nicolae, J. Šibík, Čarni/Juvan, J.A. Molina, E. von Wachenfeldt, R. Delarze, Đ. Milanović, V. Matevski

Working Group Freshwater Habitats: G. Arts, F. Landucci, J.A. Molina, B. Poulin, H. Toivonen

Reviewers
K. Šumberová

Date of assessment
28/09/2015

Date of review
27/03/2016

References

Biondi E., Burrascano S., Casavecchia S., Copiz R., Del Vico E., Galdenzi D., Gigante D., Lasen C., Spampinato G., Venanzoni R., Zivkovic L., Blasi C., 2012. Diagnosis and syntaxonomic interpretation of Annex I Habitats (Dir. 92/43/ EEC) in Italy at the alliance level. Plant Sociology, 49 (1): 5-37.

Kiesslich, M., Dengler, J., & Berg, C. 2003. Die Gesellschaften der Bidentetea tripartitae Tx. et al. ex von Rochow 1951 in Mecklenburg-Vorpommern mit Anmerkungen zur Synsystematik und Nomenklatur der Klasse. Feddes Repertorium 114: 91–139.