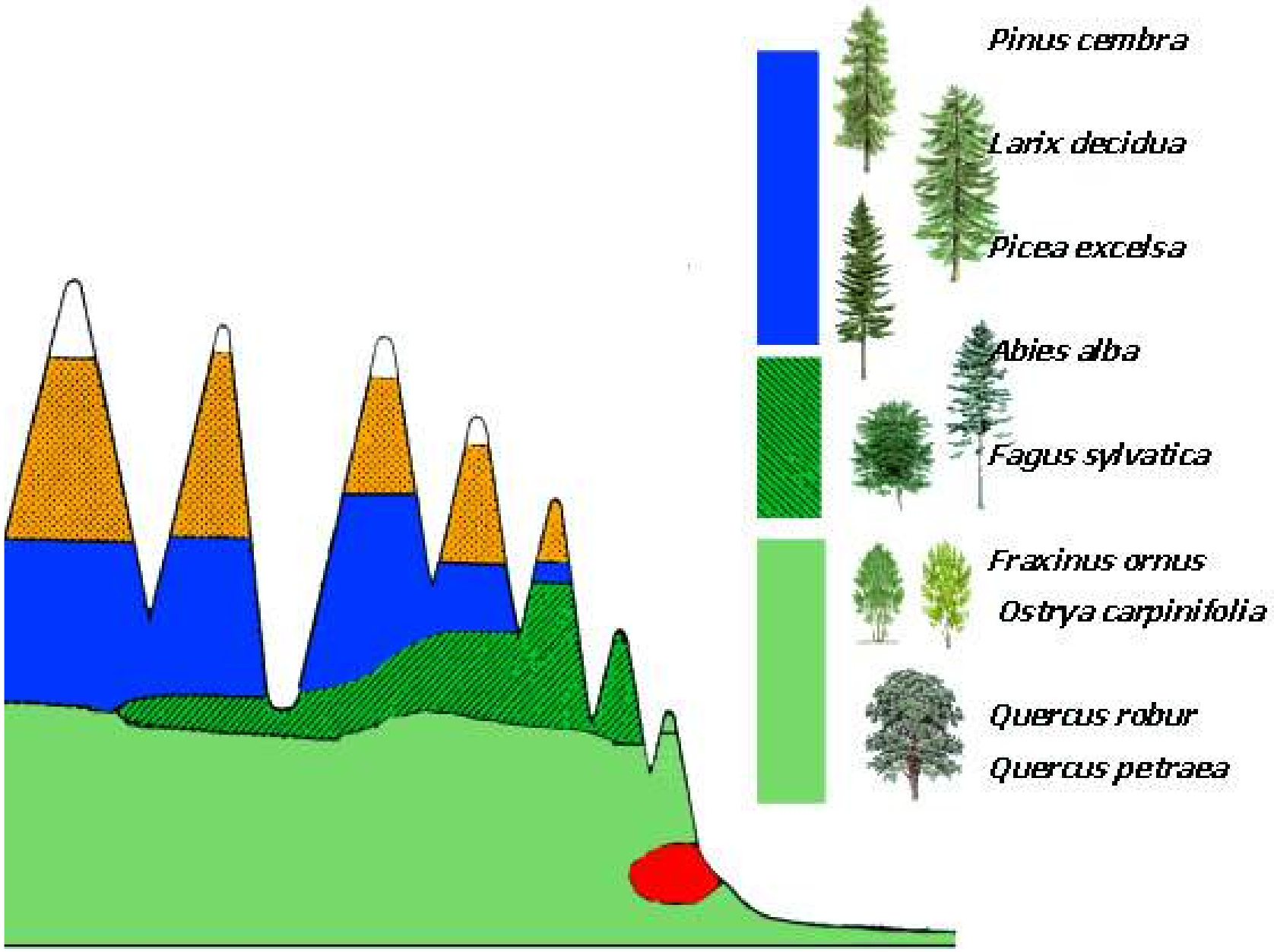
natura che vale
BIODIVERSITÀ, RICCHEZZA DELLA LOMBARDIA

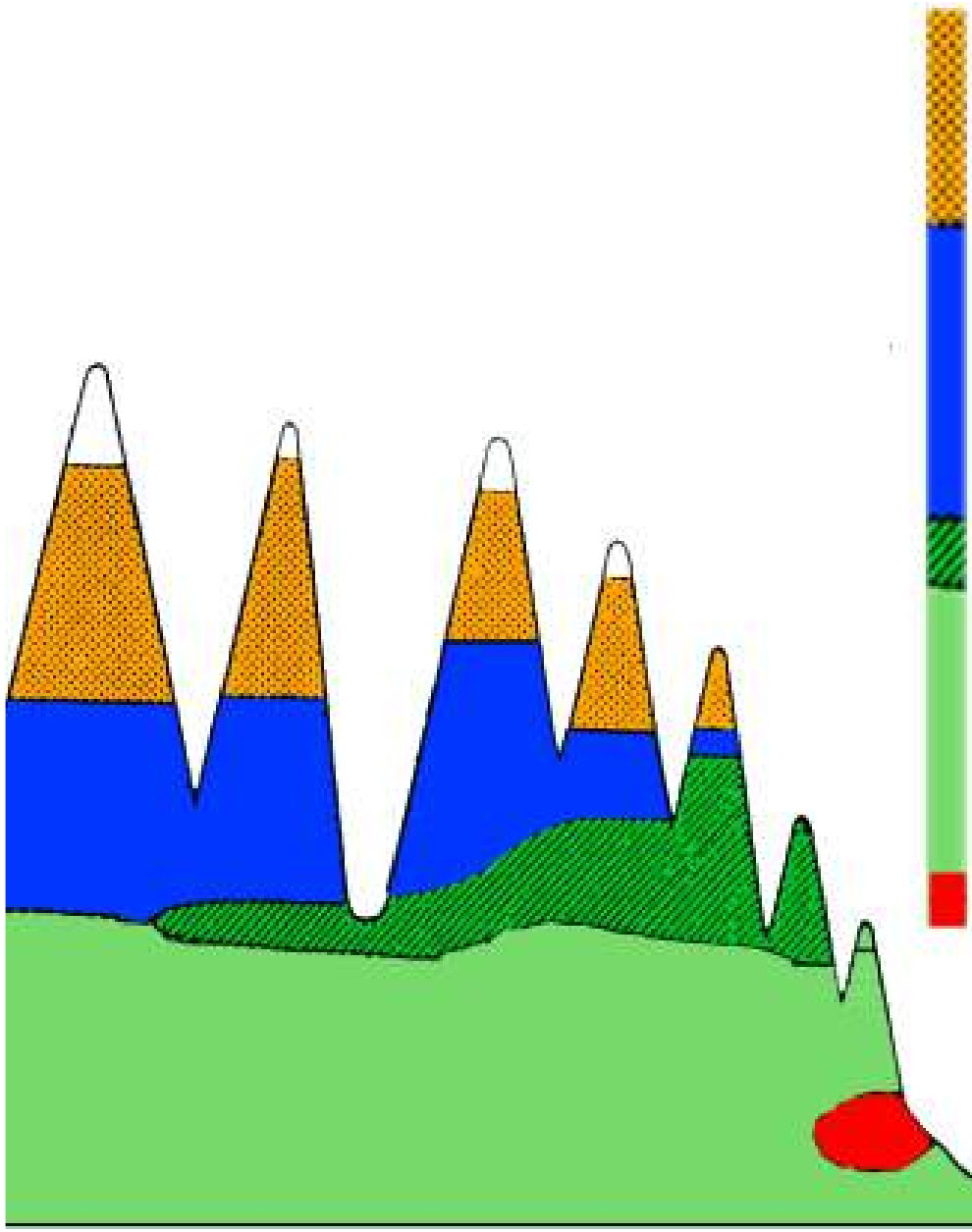
Il monitoraggio degli Habitat

Regione Lombardia

Habitat N2000 della Lombardia: collocazione e concatenazione in relazione a fattori ecologici e successioni ecologiche, quali premesse gestionali

(Bruno E.L. Cerabolini - Università degli Studi dell'Insubria)


Pinus cembra
Larix decidua
Picea excelsa
Abies alba
Fagus sylvatica
Fraxinus ornus
Ostrya carpinifolia
Quercus robur
Quercus petraea



6150 Formazioni erbose boreo-alpine silicicole
4060 Lande alpine e boreali

9420 Foreste alpine di *Larix decidua* e/o *Pinus cembra*
9410 Foreste acidofile montane e alpine di *Picea* (Vaccinio-Piceetea)

9130 Faggeti dell'Asperulo-Fagetum
91K0 Foreste illiriche di *Fagus sylvatica* (*Aremonio-Fagion*)
9110 Faggeti del *Luzulo-Fagetum*

9160 Querceti di farnia o rovere subatlantici e dell'Europa centrale del *Carpinion betuli*
91L0 Querceti di rovere illirici (*Erythronio-Carpinion*)
9190 Vecchi querceti acidofili delle pianure sabbiose con *Quercus robur*

9340 Foreste di *Quercus ilex* e *Quercus rotundifolia*

6150 Formazioni erbose boreo-alpine silicicole

4060 Lande alpine e boreali

6230* Formazioni erbose a *Nardus*, ricche di specie, su substrato siliceo delle zone montane

9420 Foreste alpine di *Larix decidua* e/o *Pinus cembra*

4060 Lande alpine e boreali

9420 Foreste alpine di *Larix decidua* e/o *Pinus cembra*

9410 Foreste acidofile montane e alpine di *Picea* (*Vaccinio-Piceetea*)

6520 Praterie montane da fieno

9410 Foreste acidofile montane e alpine di *Picea* (*Vaccinio-Piceetea*)

8210 Pareti rocciose calcaree con vegetazione casmofitica

8120 Ghiaioni calcarei e scisto-calcarei montani e alpini (*Thlaspietea rotundifolii*)

4070* Boscaglie di *Pinus mugo* e *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)

6170 Formazioni erbose calcicole alpine e subalpine

91K0 Foreste illiriche di *Fagus sylvatica* (*Aremonio-Fagion*)

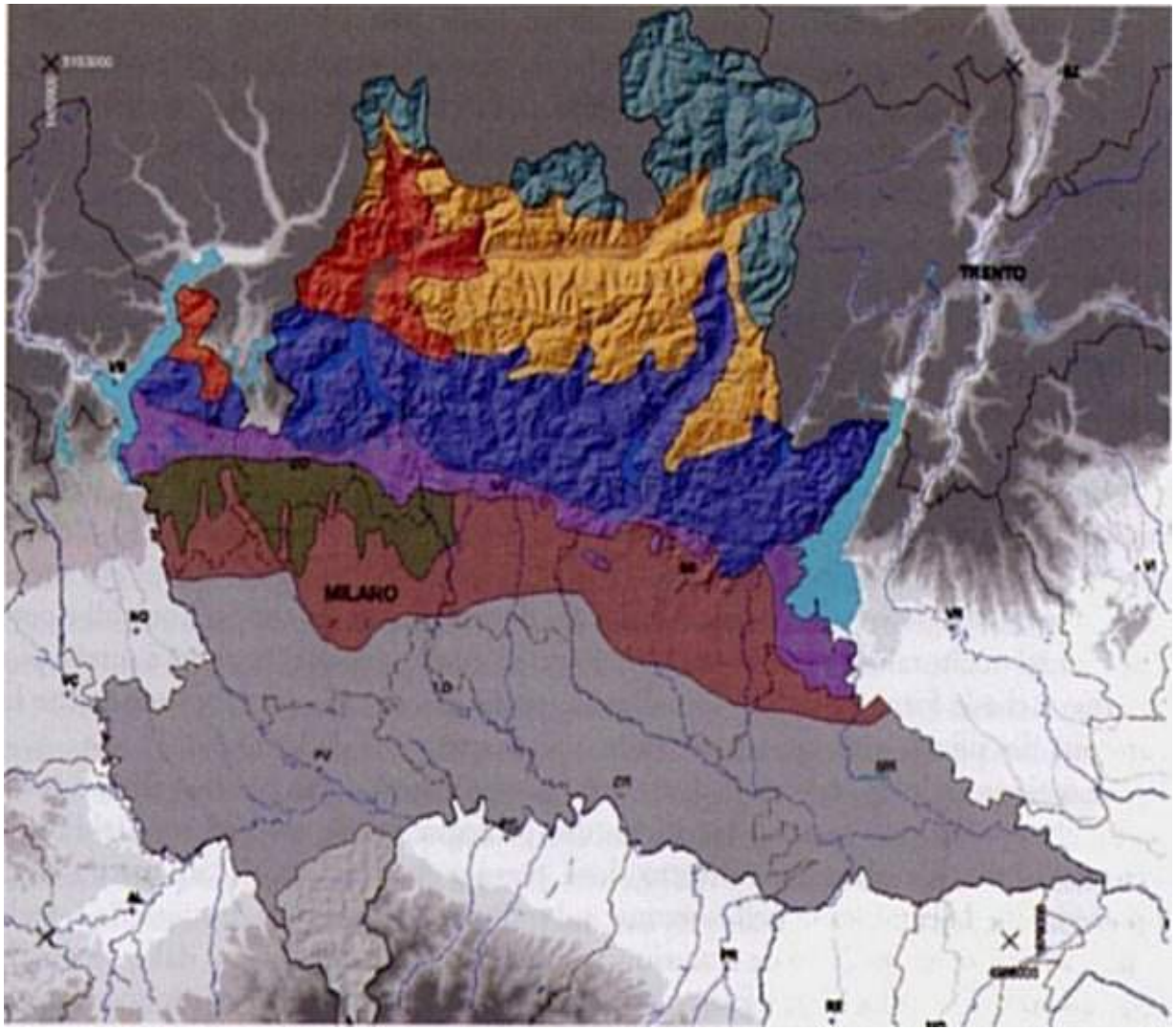
4060 Lande alpine e boreali

9410 Foreste acidofile montane e alpine di *Picea* (*Vaccinio-Piceetea*)

9130 Faggeti *dell'Asperulo-Fagetum*

COD	HABITAT	AREA (ha)	AREA (%)	SIC/ZSC
		183013.1	**100.00**	**n.siti**
8220	**Pareti rocciose silicee con vegetazione casmofitica**	11090.0	6.06	40
8110	**Ghiaioni silicei dei piani montano fino a nivale (*Androsacetalia alpinae* e *Galeopsietalia ladani*)**	15699.0	8.58	47
6150	**Formazioni erbose boreo-alpine silicicole**	24050.0	13.14	50
4060	**Lande alpine e boreali**	11368.6	6.21	56
9420	**Foreste alpine di *Larix decidua* e/o *Pinus cembra***	9691.5	5.30	46
9410	**Foreste acidofile montane e alpine di *Picea (Vaccinio-Piceetea)***	21465.2	11.73	38
9110	**Faggeti del *Luzulo-Fagetum***	5699.5	3.11	17
	TOTALE	**99063.9**	**54.13**	

COD	HABITAT	AREA (ha)	AREA (%)	SIC/ZSC
		183013.1	**100.00**	**n.siti**
8210	**Pareti rocciose calcaree con vegetazione casmofitica**	5853.5	3.20	34
8120	**Ghiaioni calcarei e scisto-calcarei montani e alpini *(Thlaspietea rotundifolii)***	5137.1	2.81	22
6170	**Formazioni erbose calcicole alpine e subalpine**	10354.5	5.66	27
4070*	**Boscaglie di Pinus mugo e *Rhododendron hirsutum* *(Mugo-Rhododendretum hirsuti)***	3751.2	2.05	25
9130	**Faggeti dell'*Asperulo-Fagetum***	6958.6	3.80	13
91K0	**Foreste illiriche di *Fagus sylvatica (Aremonio-Fagion)***	5286.0	2.89	12
8340	**Ghiacciai permanenti**	9314.2	5.09	15
6230*	**Formazioni erbose a *Nardus,* ricche di specie, su substrato siliceo delle zone montane**	9855.2	5.38	43
	TOTALE	**56510.3**	**30.88**	



- appennica
- bassa pianura
- alta pianura
- pianalti
- avanalpica
- esalpica centro-orientale esterna
- esalpica occidentale interna
- mesalpica
- endalpica

	REGIONI FORESTALI						
ORIZZONTI	appenninica	planiziale	avanalpica	esalpica		mesalpica	endalpica
				centro-orienale esterna	occidentale interna		
subalpino						peccete lariceti mughete alneti	peccete lariceti larici-cembreti cembreti alneti mughete
altimontano				faggete rr. abieteti	faggete lariceti	peccete lariceti mughete piceo-faggeti abieteti alneti	peccete lariceti larici-cembreti alneti
montano	faggete			faggete rr. abieteti	faggete pinete p. silvestre rr. abieteti	abieteti piceo-faggeti pinete p. silvestre betuleti rr. faggete	peccete lariceti pinete p. silvestre rr. abieteti
submontano	querceti di roverella orno-ostrieti castagneti robinieti		querco-carpineti collinari robinieti castagneti querceti di roverella	querceti di roverella orno-ostrieti pinete p. silvestre	castagneti querceti di rovere robinieti	castagneti querceti di rovere aceri-frassineti	
basale		querco-carpineti planiziali querceti di farnia e/o rovere castagneti pinete p. silvestre robinieti					

	APPENNINICA	PLANIZIALE OVEST	PLANIZIALE EST	AVANALPICA	ESALPICA calcare	ESALPICA silice	MESALPICA	ENDALPICA
ALPINA	-	-	-	-	-	-	**6150** Formazioni erbose boreo-alpine silicicole	**6150** Formazioni erbose boreo-alpine silicicole
SUBALPINA	-	-	-	-	-	-	**4060** Lande alpine e boreali **9420** Foreste alpine di *Larix decidua* e/o *Pinus cembra*	**4060** Lande alpine e boreali **9420** Foreste alpine di *Larix decidua* e/o *Pinus cembra*
ALTIMONTANA	-	-	-	-	**91K0** Foreste illiriche di *Fagus sylvatica* (*Aremonio-Fagion*)	**9410** Foreste acidofile montane e alpine di *Picea* (*Vaccinio-Piceetea*) **9110** Faggeti del *Luzulo-Fagetum*	**9410** Foreste acidofile montane e alpine di *Picea* (*Vaccinio-Piceetea*)	**9410** Foreste acidofile montane e alpine di *Picea* (*Vaccinio-Piceetea*)
MONTANA	**9130** Faggeti *dell'Asperulo-Fagetum*	-	-	-	**91K0** Foreste illiriche di *Fagus sylvatica* (*Aremonio-Fagion*) **9130** Faggeti *dell'Asperulo-Fagetum*	**9130** Faggeti *dell'Asperulo-Fagetum* **9110** Faggeti del *Luzulo-Fagetum*	**9130** Faggeti *dell'Asperulo-Fagetum* **9110** Faggeti del *Luzulo-Fagetum*	**9410** Foreste acidofile montane e alpine di *Picea* (*Vaccinio-Piceetea*)
COLLINARE	**9160** Querceti di farnia o rovere subatlantici e dell'Europa centrale del *Carpinion betuli* **91AA*** Boschi orientali di quercia bianca	-	-	**9160** Querceti di farnia o rovere subatlantici e dell'Europa centrale del *Carpinion betuli* **91L0** Querceti di rovere illirici (*Erythronio-Carpinion*) **91H0** Boschi pannonici di *Quercus pubescens*	**91L0** Querceti di rovere illirici (*Erythronio-Carpinion*) **91H0** Boschi pannonici di *Quercus pubescens*	**9160** Querceti di farnia o rovere subatlantici e dell'Europa centrale del *Carpinion betuli* **9190** Vecchi querceti acidofili delle pianure sabbiose con *Quercus robur*	**9160** Querceti di farnia o rovere subatlantici e dell'Europa centrale del *Carpinion betuli* **91L0** Querceti di rovere illirici (*Erythronio-Carpinion*) **91H0** Boschi pannonici di *Quercus pubescens*	-
PLANIZIALE	-	**9160** Querceti di farnia o rovere subatlantici e dell'Europa centrale del *Carpinion betuli* **9190** Vecchi querceti acidofili delle pianure sabbiose con *Quercus robur*	**91L0** Querceti di rovere illirici (*Erythronio-Carpinion*)	-	-	-	-	-

9260 Boschi di *Castanea sativa*

Habitat Italia

home collaboratori documenti archivio link tematici

mostra didascalie (in ogni campo)

91: Foreste dell'Europa temperata

9180*: Foreste di versanti, ghiaioni e valloni del Tilio-Acerion

Tilio-Acerion forests of slopes, screes and ravines

Codice CORINE Biotopes

41.4 Mixed ravine and slope forests
41.41 Ravine ash-sycamore forests
41.43 Alpine and peri-Alpine slope forests
41.45 Thermophilous Alpine and peri-Alpine mixed lime forests

Codice EUNIS

G1.A4 Boschi di forra e di versante
G1.A43 Foreste di versante peri-alpine di *Fraxinus* sp. e *Acer pseudoplatanus*
G1.A45 Foreste termofile miste della regione alpina e peri-alpina, con *Tilia* sp. dominante
G1.A5 - Boschi con *Tilia* sp. dominante
G1.A51 - Boschi di *Tilia* sp. dell'Europa centro-occidentale
G1.A52 - Boschi sub-boreali di *Tilia* sp.
G1.A53 - Boschi di *Tilia* sp. dell'Europa orientale

Tilia platyphyllos, *Simona Casavecchia*

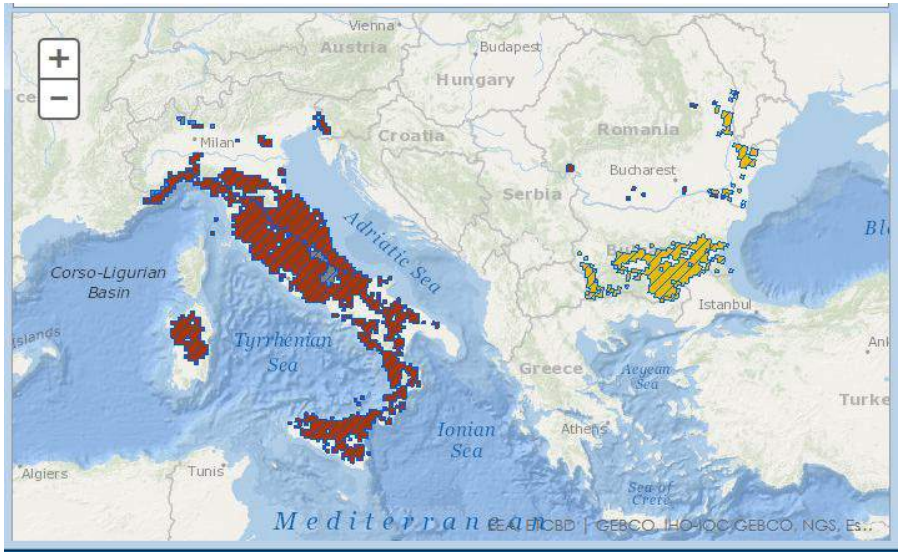
30 Tilio-Acerion Klika 55
35 Clematido vitalbae-Corylenion avellanae
45 Vincetoxicum hirundinaria-Corylus avellana-Gesellschaft
45 Mercurialis perennis-Corylus avellana-Gesellschaft
45 Adenostyles alpina-Corylus avellana-Gesellschaft
35 Deschampsio flexuosae-Acerenion pseudoplatani
40 Querce petraeae-Tilietum platyphylli
45 Deschampsia flexuosa-Acer pseudoplatanus-Gesellschaft.
35 Tilienion platyphylli
40 Aceri platanoidis-Tilietum platyphylli
35 Lunario-Acerenion pseudoplatani
40 Sorbo ariae-Aceretum pseudoplatani
40 Fraxino-Aceretum pseudoplatani (W.Koch 26) Tx.37 em.Th.Mull.66
40 Ulmo-Aceretum (Beg.22) Issl.26
40 Adoxo moschatellinae-Aceretum

Siti Natura 2000 con 91AA in EU

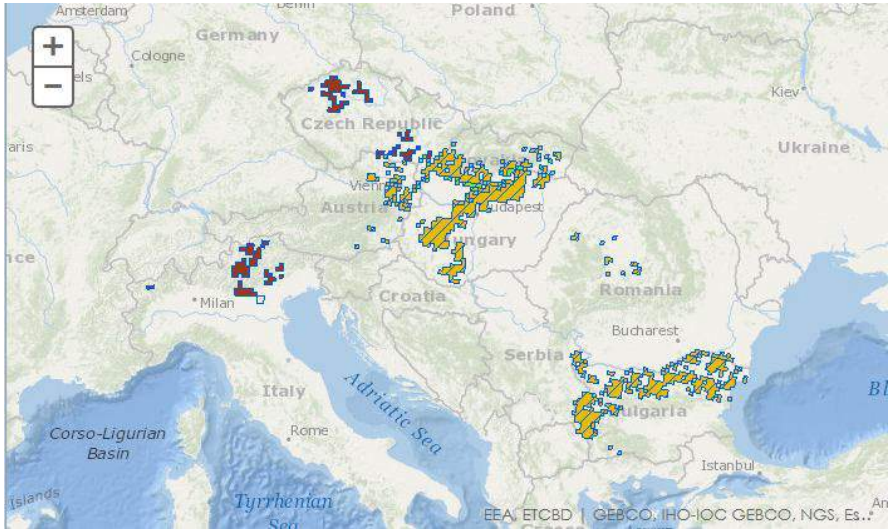
Bulgaria	46
Italy	302
Romania	24

Siti Natura 2000 con 91H0in EU

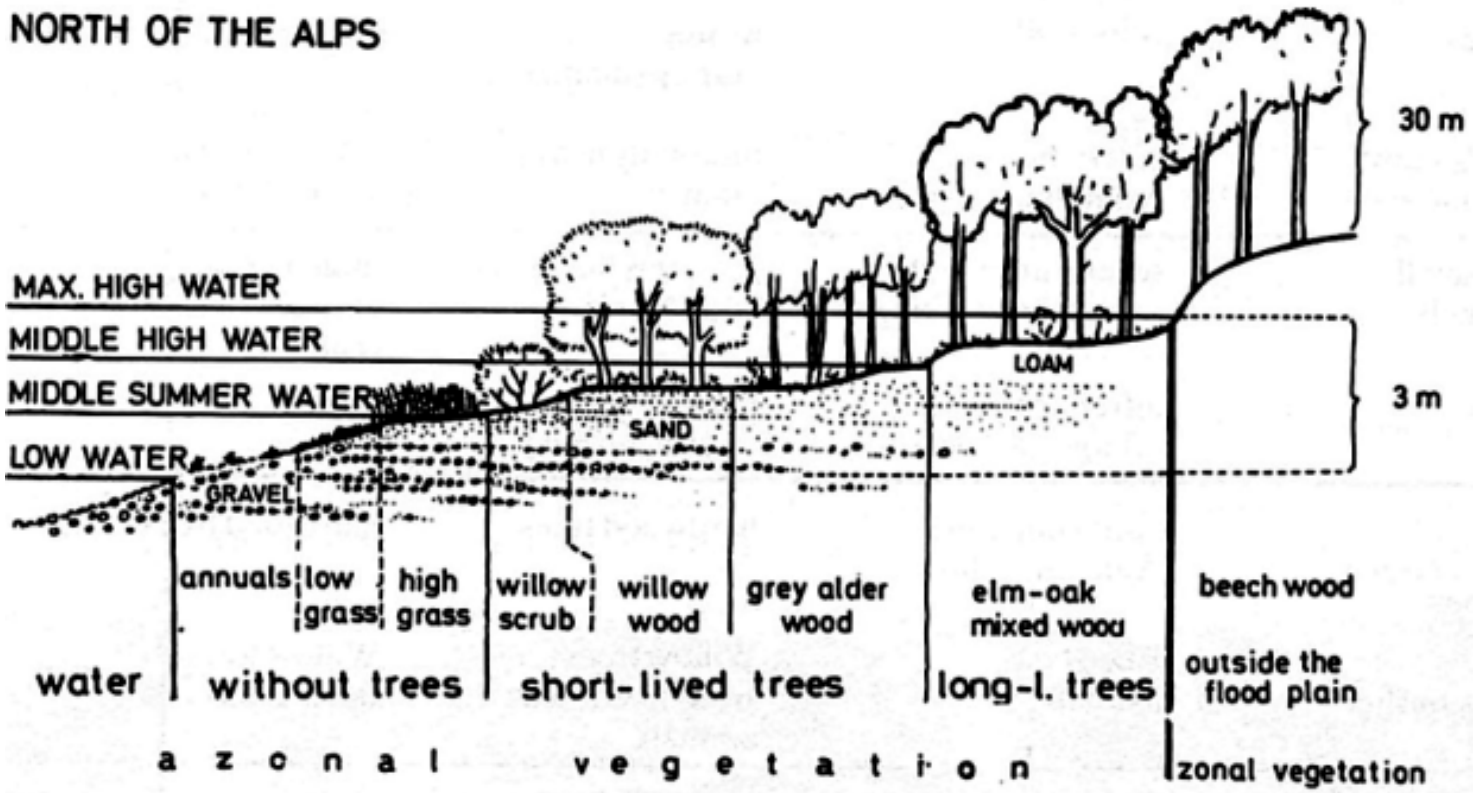
Austria	11
Bulgaria	63
Croatia	3
Czech Republic	16
Hungary	88
Italy	69
Romania	8
Slovakia	79
Totale complessivo	**337**



91AA – Distribuzione in Europa



91H0 – Distribuzione in Europa



3270 Fiumi con argini melmosi con vegetazione del *Chenopodion rubri* p.p e *Bidention* p.p.

6430 Bordure planiziali, montane e alpine di megaforbie idrofile

91E0* Foreste alluvionali di *Alnus glutinosa* e *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

91F0 Foreste miste riparie di grandi fiumi a *Quercus robur*, *Ulmus laevis* e *U. minor*, *Fraxinus excelsior* o *F. angustifolia* (*Ulmenion minoris*)

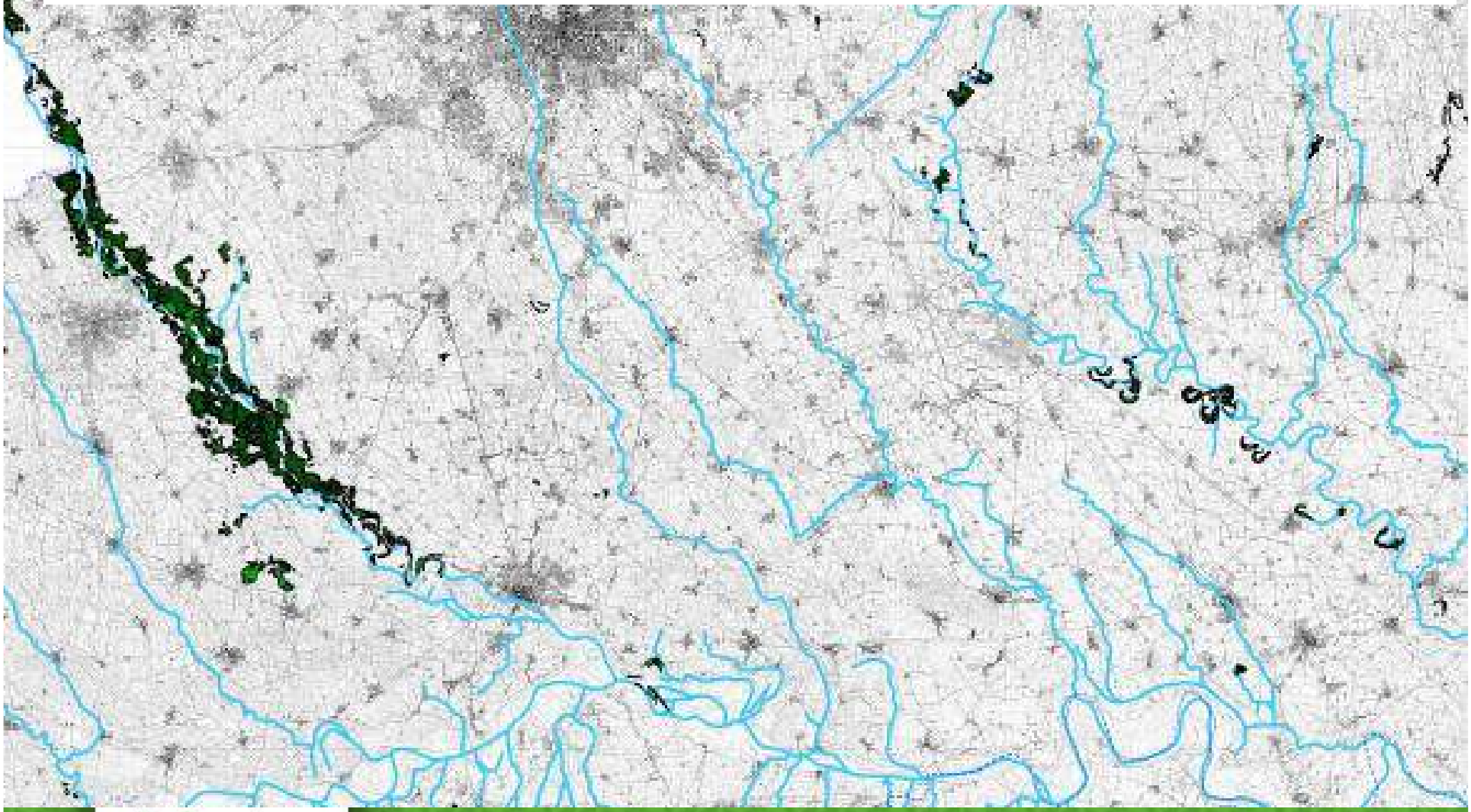
9190 Vecchi querceti acidofili delle pianure sabbiose con *Quercus robur*

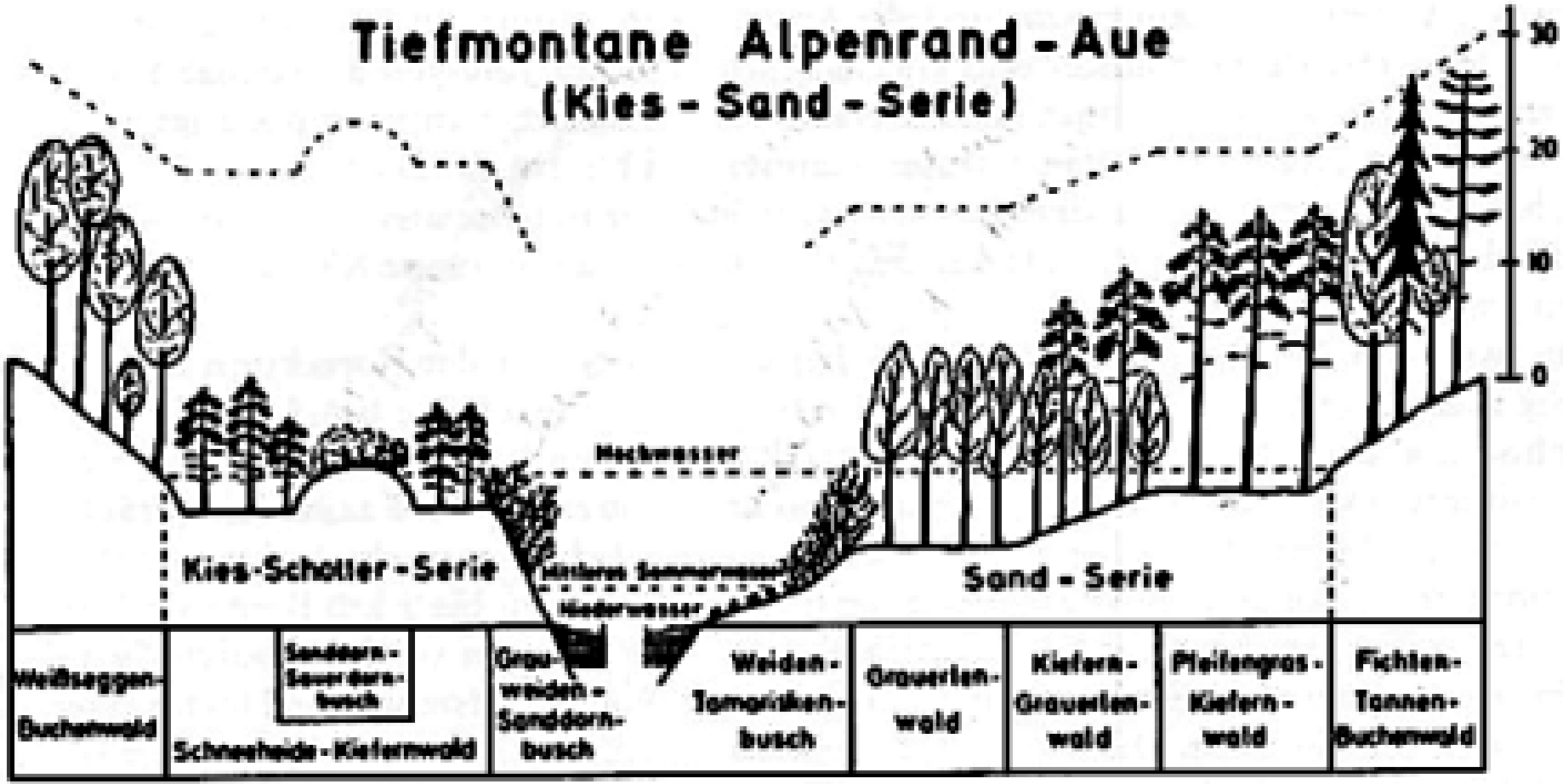
9160 Querceti di farnia o rovere subatlantici e dell'Europa centrale del *Carpinion betuli*

91L0 Querceti di rovere illirici (*Erythronio-Carpinion*)

91E0* Foreste alluvionali di *Alnus glutinosa* e Fraxinus excelsior (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

91F0 Foreste miste riparie di grandi fiumi a *Quercus robur*, *Ulmus laevis* e *U. minor*, *Fraxinus excelsior* o *F. angustifolia* (*Ulmenion minoris*)



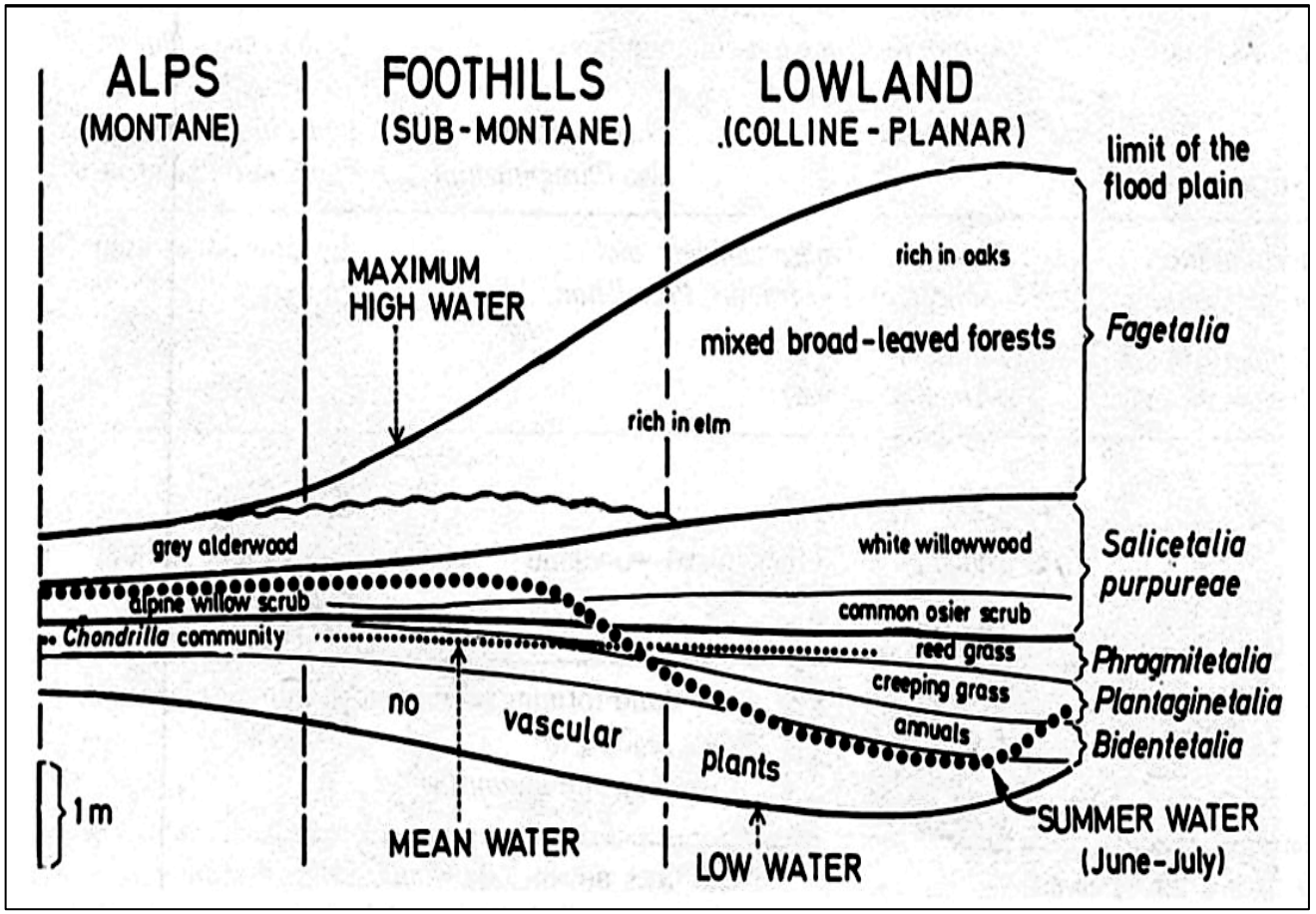


SERIE MONTANO SUBALPINA DEI LETTI GHIAIOSI

Arbusteti a
Myricaria germanica
Hippopae rhamnoides

SERIE MONTANO SUBALPINA DEI LETTI SABBIOSI

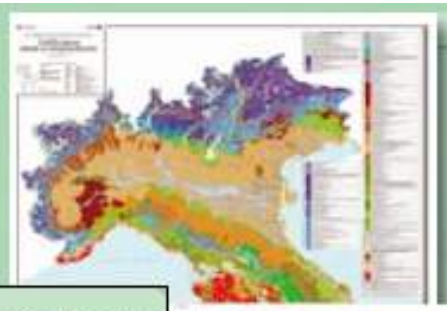
Saliceti arbustivi
Alnete a *Alnus incana*
Pinete
Peccio-Abete-Faggio

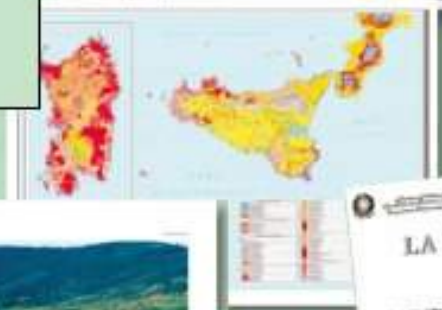


3220 Fiumi alpini con vegetazione riparia erbacea
3230 Fiumi alpini con vegetazione riparia legnosa a *Myricaria germanica*
3240 Fiumi alpini con vegetazione riparia legnosa a *Salix elaeagnos*

91E0* Foreste alluvionali di *Alnus glutinosa* e *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)
91F0 Foreste miste riparie di grandi fiumi a *Quercus robur*, *Ulmus laevis* e *U. minor*, *Fraxinus excelsior* o *F. angustifolia* (*Ulmenion minoris*)

La Vegetazione d'Italia





Il volume e la carta sono raccolti in un elegante cofanetto e presentano le seguenti note tecniche:
formato 24 x 30 cm
stampa a colori
pagine 600 circa
rilegatura cartonata
prezzo di copertina 120,00 Euro
È possibile avere uno sconto del 30% sul prezzo di copertina per i possessori della cedola di prenotazione

a cura di
Carlo Blasi

SAPIENZA
Università di Roma

natura che vale
BIODIVERSITÀ, RICCHEZZA DELLA LOMBARDIA

LIFE GESTIRE 2020 - Nature Integrated Management to 2020.
Lo sforzo integrato per Rete Natura 2000 e la sua diversità in Lombardia

Contents lists available at SciVerse ScienceDirect

Biological Conservation

journal homepage: www.elsevier.com/locate/biocon

Biological Conservation 147 (2012) 174–183

Ecological classification of land and conservation of biodiversity at the national level: The case of Italy

Giulia Capotorti [a], Domenico Guida [b], Vincenzo Siervo [b], Daniela Smiraglia [c,*], Carlo Blasi [a,d]

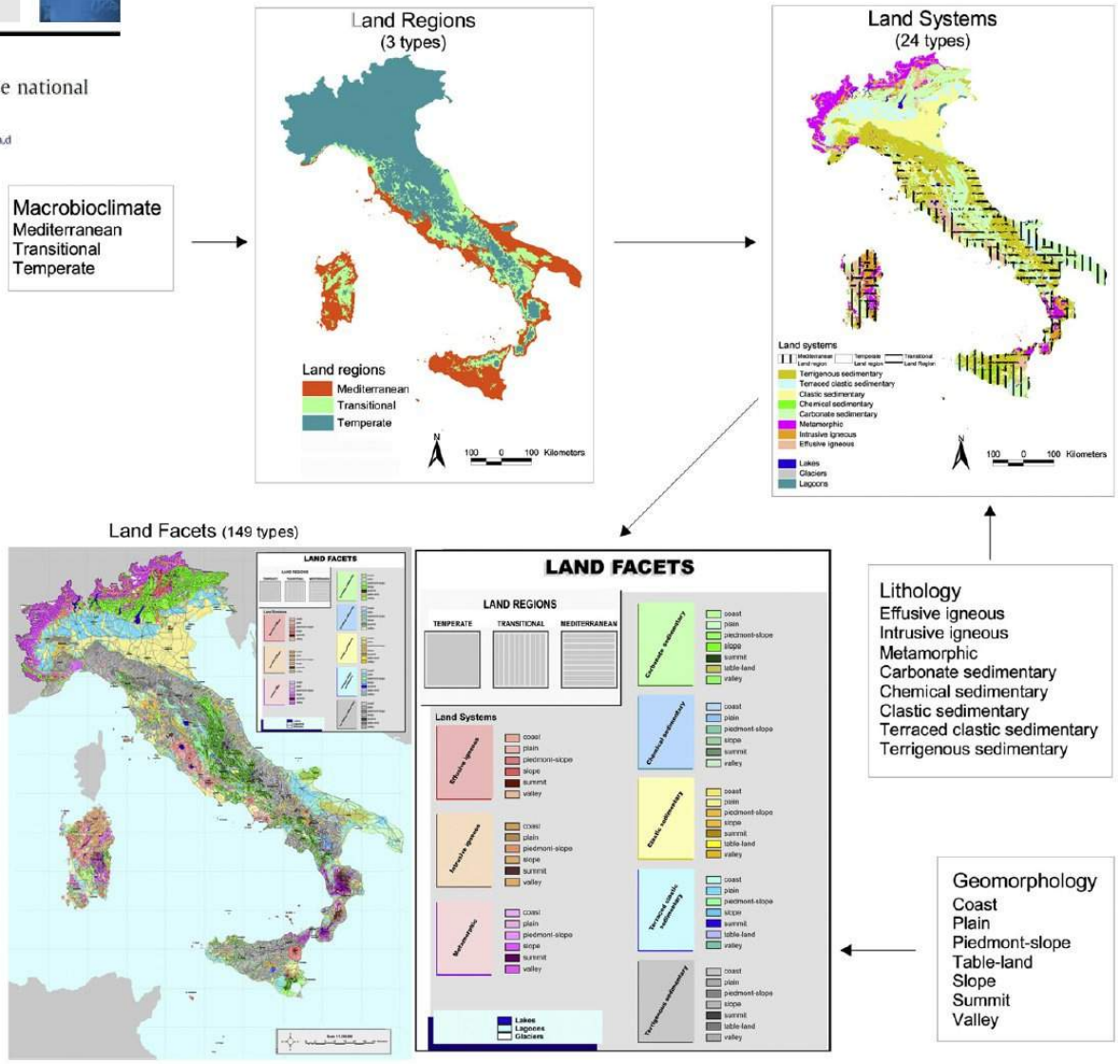
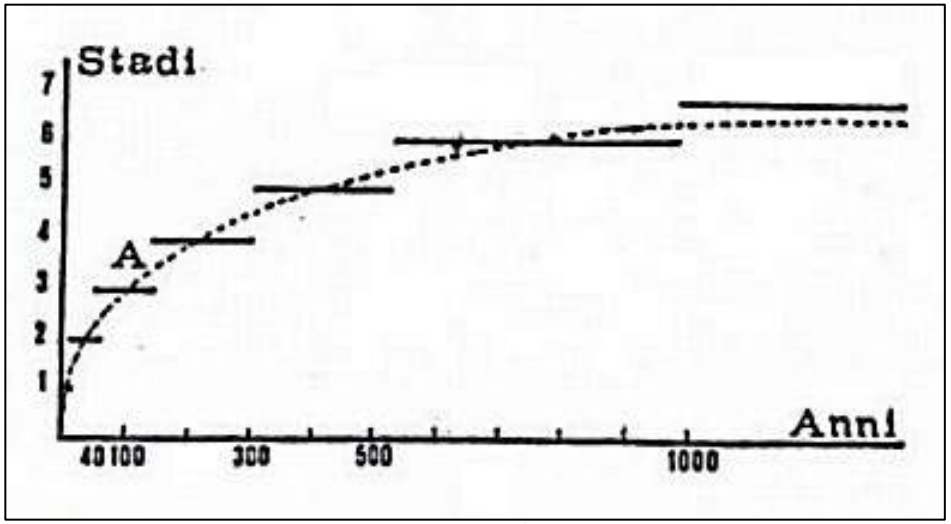
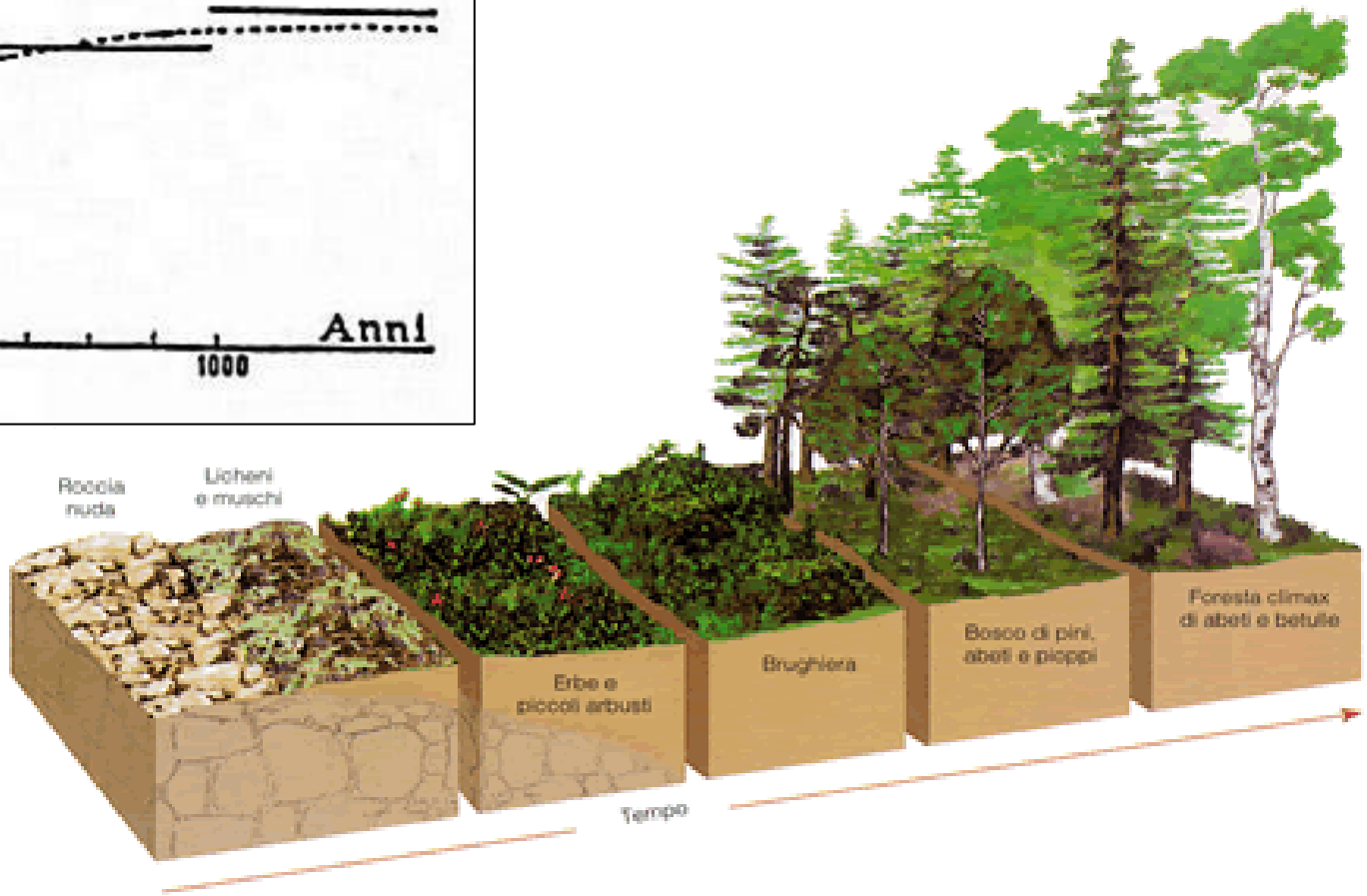


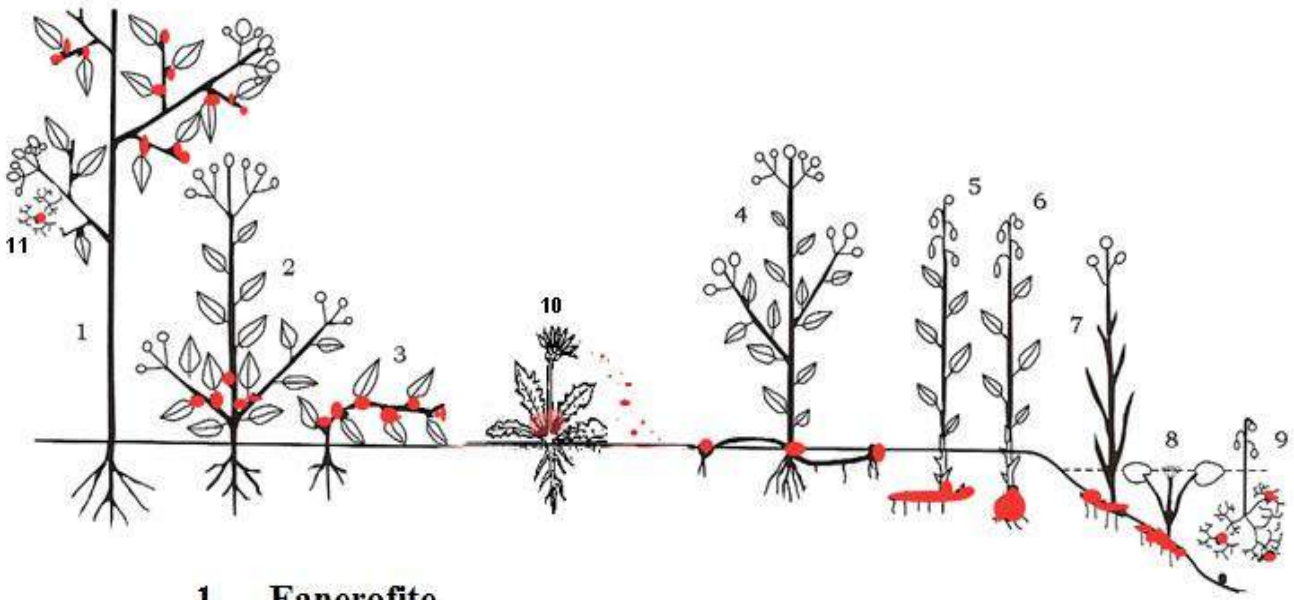
Fig. 1. Hierarchical land classification of Italy. Land Regions reflect macrobioclimate features; Land Systems subdivide Land Regions according to lithological features; Land Facets subdivide Land Systems according to morphological features.





Successioni

variazioni permanenti che comportano il succedersi nello stesso luogo di popolazioni di differenti specie e di differenti comunità



1 Fanerofite.
11 Fanerofite epifite.
2-3 Camefite.
4 Emicriptofite.
5 Geofite rizomatose.
6 Geofite bulbose.
7 Elofite.
8 Idrofite radicanti.
9 Idrofite natanti.
10 Terofite rosulate.

stabilità


lamineto (idrofite)


prato (emicriptofite)


bosco
(fanerofite = alberi)


canneto (elofite)

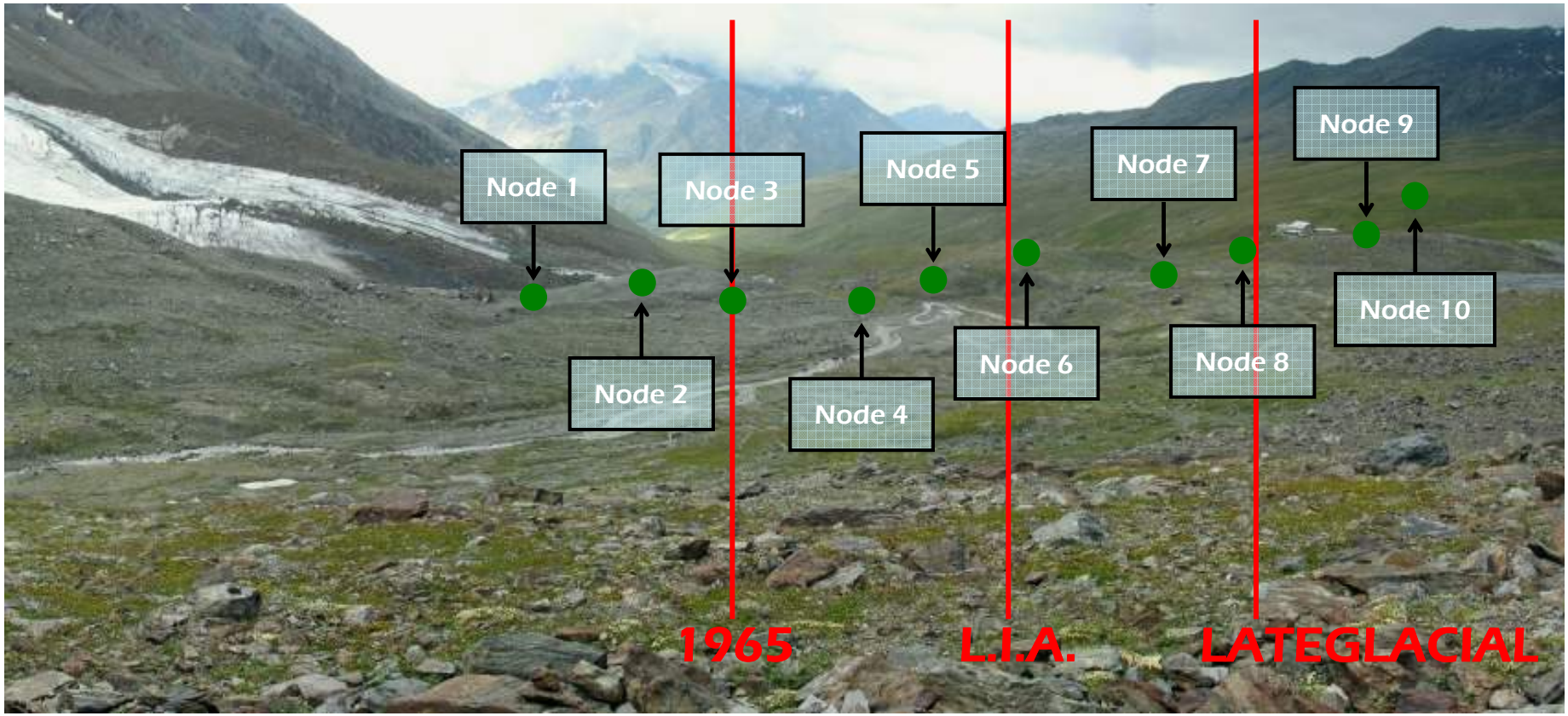

arbusteto
(fanerofite = arbusti)

stabilità

OIKOS 112: 10–20, 2006

The functional basis of a primary succession resolved by CSR classification

Marco Caccianiga, Alessandra Luzzaro, Simon Pierce, Roberta M. Ceriani and Bruno Cerabolini



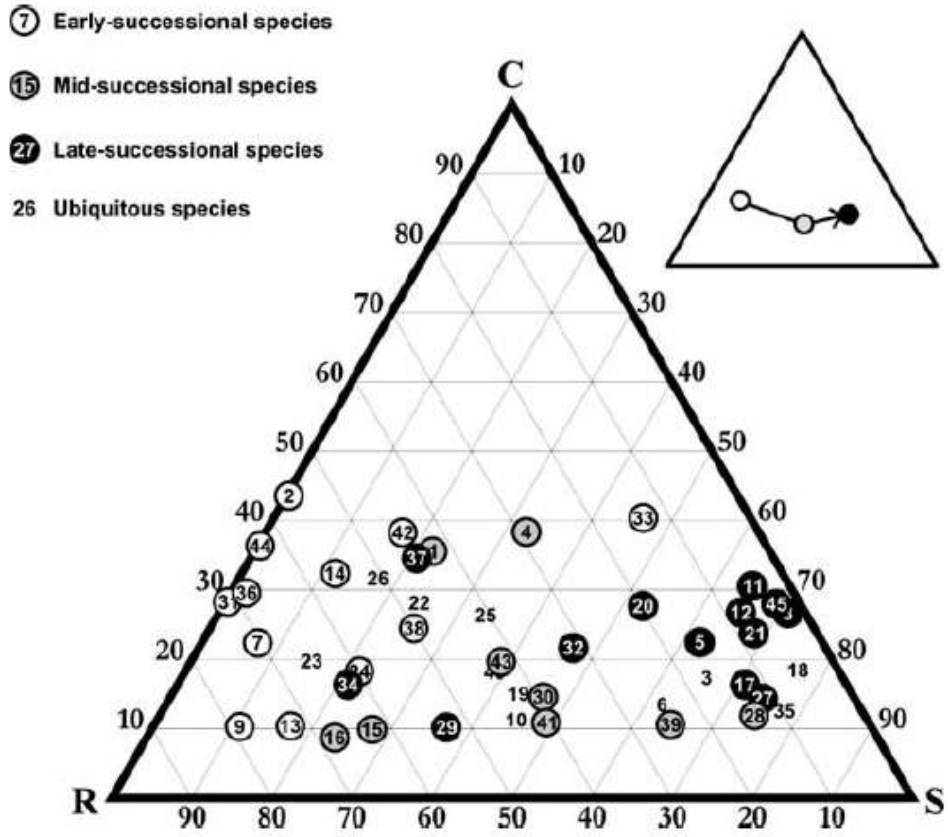


Fig. 3. CSR classification of 45 angiosperms from the foreland of the Rutor glacier, Italy, based on the plant characters and methodology described by Hodgson et al. (1999). Species numbers follow Table 1. The smaller triangle (top right) shows the mean CSR strategy at early- (open circle), mid- (filled grey circle) and late-succession (filled black circle).

8110 Ghiaioni silicei dei piani montano fino a nivale (*Androsacetalia alpinae e Galeopsietalia ladani*)

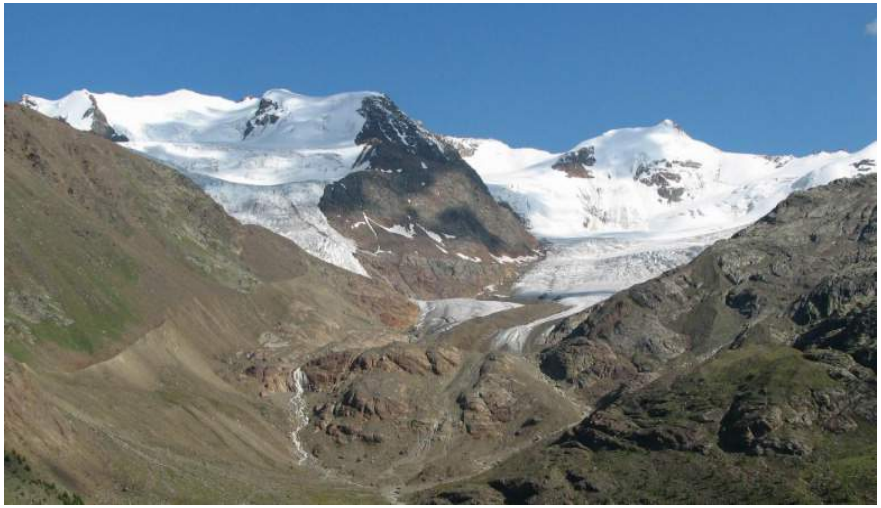
6150 Formazioni erbose boreo-alpine silicicole

DURATA delle SUCCESSIONI

Tab. 14.2. *Tempi necessari alla formazione di associazioni nella fascia alpina in Svizzera* (da Friedel).

data delle osservazioni 1938 anno d'inizio	durata anni*	vegetazione
1920	18	*Oxyrietum* primitivo
1890	48	*Oxyrietum* maturo
1875	63	Comunità ad *Agrostis rupestris*
1865	73	Com. a *Trifolium pallescens*
1856	82	id.
1818	120	*Nardetum*
1602	336	*Rhodoro-Vaccinietum*

* s'intende il periodo che intercorre tra la prima osservazione dell'area come non ricoperta da ghiacciaio ed il rilievo di Friedel (1938).



8110 Ghiaioni silicei dei piani montano fino a nivale (*Androsacetalia alpinae e Galeopsietalia ladani*)
6150 Formazioni erbose boreo-alpine silicicole
4060 Lande alpine e boreali

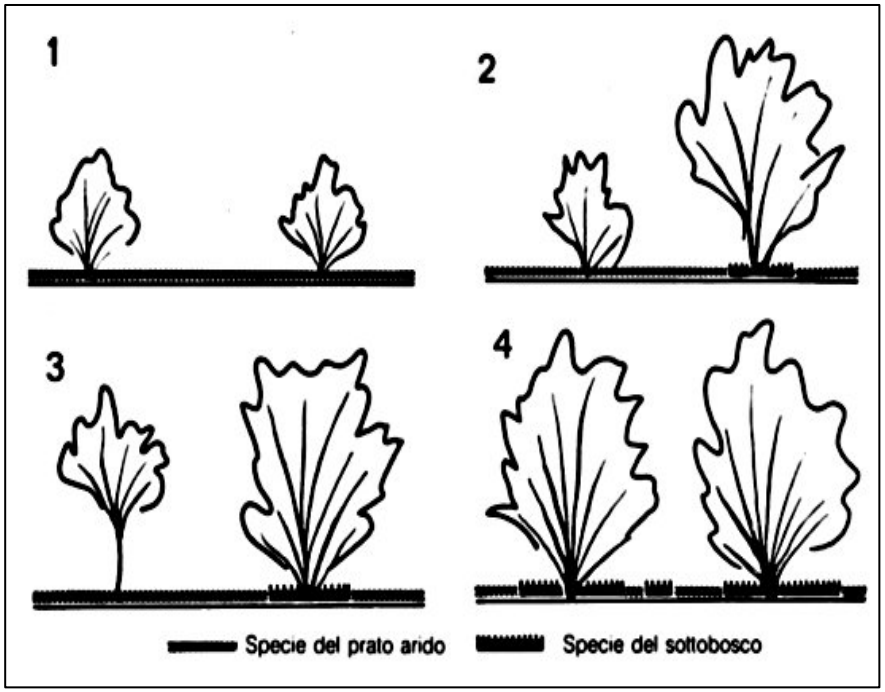
Tab. 14.1. *Tempi necessari alla formazione di associazioni nella fascia subalpina in Carinzia su calcare* (da Friedel, modificata).

durata anni	vegetazione
5	ghiaione giovanile sterile
10	ghiaione stabilizzato sterile
30	stadi pionieri di *Thlaspietum* e *Petasitetum*
90	arbusti nani striscianti: *Dryas*, *Rhodothamnus*
190	vegetazione compatta a pino mugo

8120 Ghiaioni calcarei e scisto-calcarei montani e alpini (*Thlaspietea rotundifolii*)

4060 Lande alpine e boreali

4070* Boscaglie di *Pinus mugo* e *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)



Gli arbusti vicini facilitano l'ingresso di specie del sottobosco anche non direttamente
sotto le chiome ombreggiando e apportando lettiera

L'orlo di *Calluna vulgaris* rallenta l'espansione del bosco impedendo alle ghiande di raggiungere il suolo

2330 Praterie aperte a *Corynephorus* e *Agrostis* su dossi sabbiosi interni
6210 Formazioni erbose secche seminaturali e facies coperte da cespugli su substrato calcareo (*Festuco-Brometalia*) (*orchidee)
4030 Lande secche europee

9190 Vecchi querceti acidofili delle pianure sabbiose con *Quercus robur*

Table 30: Pressure categories in the list of pressures and threats

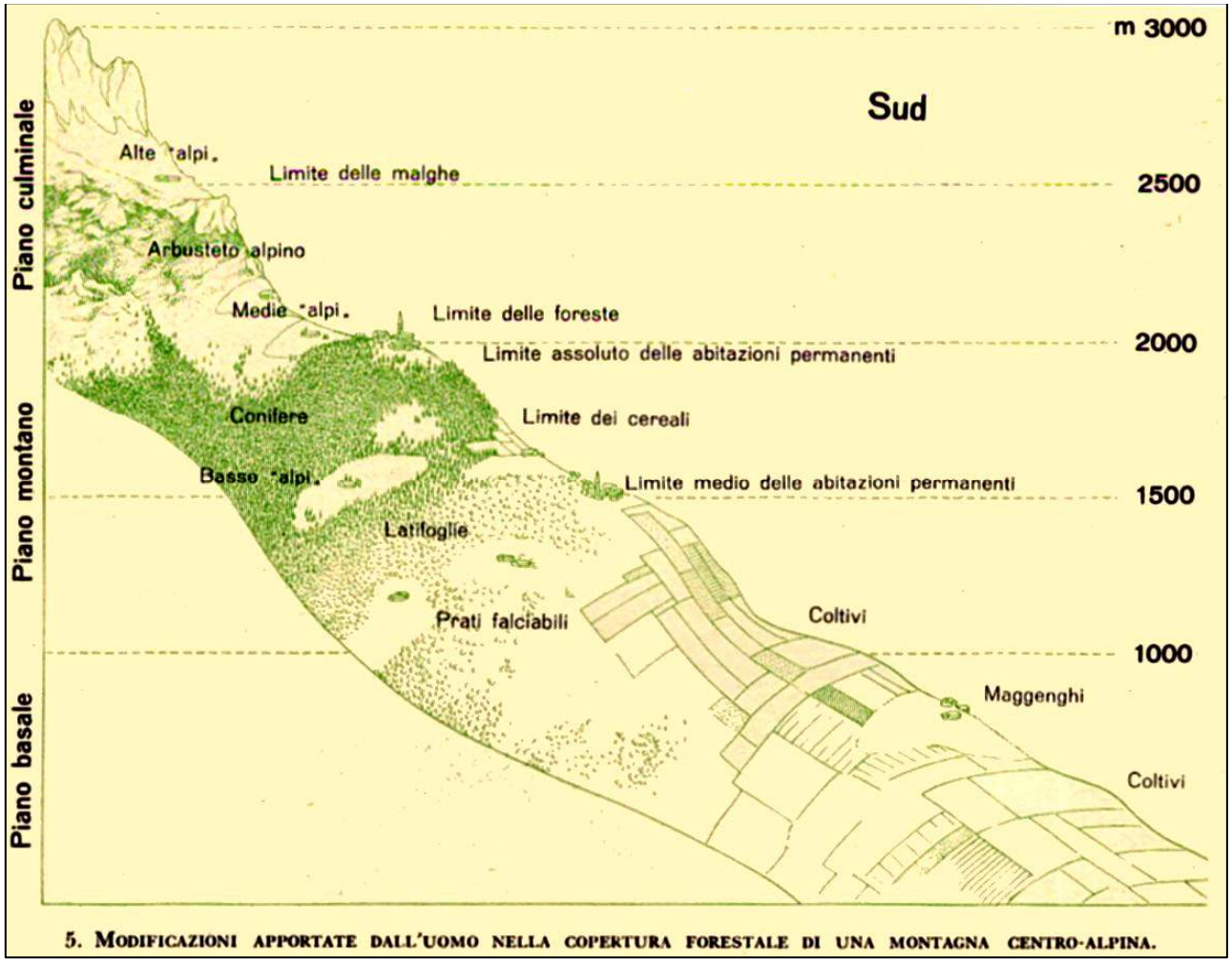
Pressure code	Pressure category	Note
A	Agriculture	Includes pressures and threats caused by agricultural practice.
B	Forestry	Includes pressures and threats caused by forestry activities, including thinning, wood harvesting, pest control in trees.
C	Extraction of resources (minerals, peat, non-renewable energy resources)	Includes pressures related to extraction of materials, such as mining or quarrying, pollution or waste disposal.
D	Energy production processes and related infrastructure development	Includes pressures related to production of energy, e.g. the construction and operation of power plants, water use for energy production, waste from energy production, activities and infrastructure related to renewable energy.
E	Development and operation of transportation and service corridors	Includes pressures related to transportation of materials or energy, such as construction of infrastructure, pollution and disturbances or increased mortality due to traffic.
F	Development, construction and use of residential, commercial, industrial and recreational infrastructure and areas.	Includes pressures related to development, construction and use of residential, commercial, industrial and recreational infrastructure, e.g. infrastructural changes on existing built areas, expansion of built areas, land use and hydrological changes for urban or industrial development, disturbances or pollution due to residential, commercial, industrial, or recreational infrastructure. Includes also pressures related to sport, tourism and leisure activities and infrastructure.
G	Extraction and cultivation of biological living resources (other than agriculture and forestry)	Includes pressures linked to uses of biological resources other than agriculture and forestry.
H	Military action, public safety measures, and other human intrusions	Includes pressures related to public safety and other human intrusions.
I	Invasive and problematic species	Includes pressures related to problematic inter-specific relationships with non-native species which cannot be associated with other pressure categories. Includes also problematic relationships with native species, which came out of balance due to human activities.
J	Mixed source pollution	Includes pollution which cannot be associated with other pressure categories.
K	Human-induced changes in hydraulic conditions	Includes hydrological and physical modifications of water bodies, which cannot be associated with other pressures categories.
L	Natural processes (excluding catastrophes and processes induced by human activity or climate change)	Includes natural processes, such as natural succession, competition, trophic interaction, erosion.
M	Geological events, natural catastrophes	Includes pressures such as natural fires, storms, tsunamis.
N	Climate change	Includes pressures related to climate change.

Main pressures and threats

Conservation measures

Table 31: Categories of conservation measures

Categories of conservation measures
Measures related to agriculture and agriculture-related habitats
Measures related to forestry and forest-related habitats
Measures related to resources exploitation and energy production
Measures related to development and operation of transport systems
Measures related to residential, commercial, industrial and recreational infrastructures, operations and activities
Measures related to the effects of use and exploitation of species
Measures related to military installations and activities and other specific human activities
Measures related to alien and problematic native species
Measures related to natural processes, geological events and natural catastrophes
Measures related to climate change
Measures outside the Member State
Measures related to mixed source pollution and human-induced changes in hydraulic conditions for several uses
Measures related to management of species from the nature directives and other native species



5. MODIFICAZIONI APPORTATE DALL'UOMO NELLA COPERTURA FORESTALE DI UNA MONTAGNA CENTRO-ALPINA.

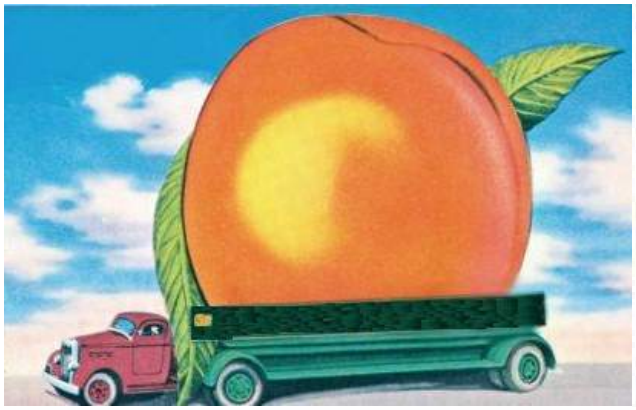
6230* Formazioni erbose a *Nardus*, ricche di specie, su substrato siliceo delle zone montane

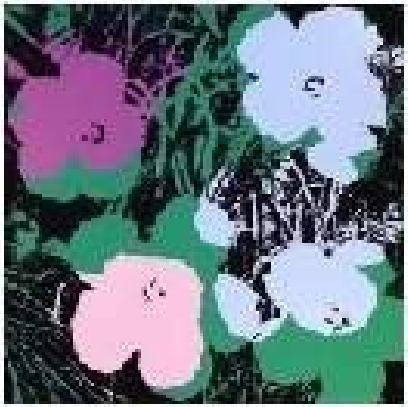
6520 Praterie montane da fieno

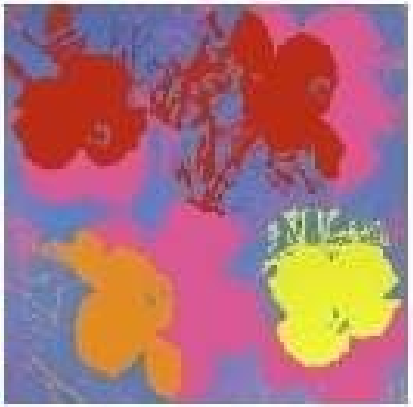
6210 Formazioni erbose secche seminaturali e facies coperte da cespugli su substrato calcareo (*Festuco-Brometalia*) (*orchidee)

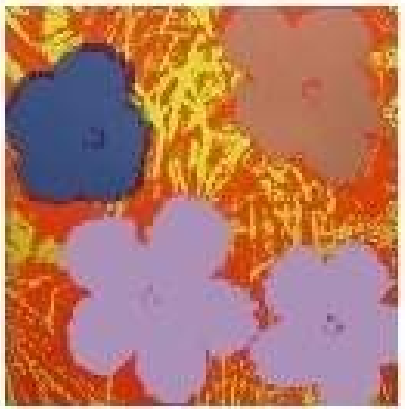
6510 Praterie magre da fieno a bassa altitudine (*Alopecurus pratensis*, *Sanguisorba officinalis*)

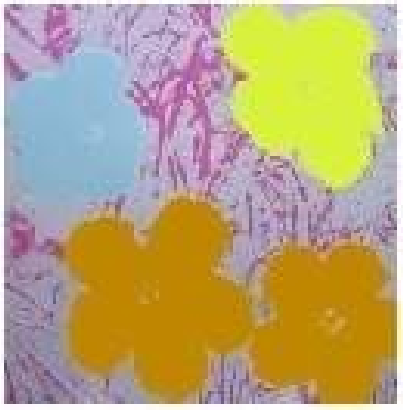
PRODUTTIVITÀ
vs
BIODIVERSITÀ

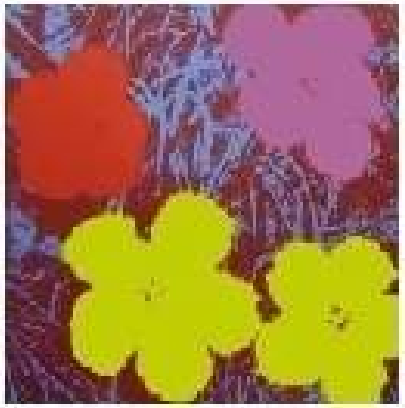












Intermediate Disturbance Hypothesis

From Wikipedia, the free encyclopedia
Jump to: navigation, search

The **Intermediate Disturbance Hypothesis** (IDH) states that local species diversity is maximized when ecological disturbance is neither too rare nor too frequent. At low levels of disturbance, more competitive organisms will push subordinate species to extinction and dominate the ecosystem.[1] At high levels of disturbance, due to frequent forest fires or human impacts like deforestation, all species are at risk of going extinct. According to IDH theory, at intermediate levels of disturbance, diversity is thus maximized because both competitive K-selected and opportunistic r-selected species can coexist.

This coexistence is a result of the differing life history strategies of species, which dictate a preference for high or low disturbance. K-selected species tend to be more competitive, because they invest a larger proportion of resources into growth and competition and thus generally dominate stable ecosystems over long time periods. In contrast, r-selected species, which colonize open areas quickly, can dominate landscapes recently cleared by disturbance. Therefore, in areas where disturbance occurs occasionally, both species can take advantage of the same region. This effect is observed for the most part in sessile species.

[edit] References

1. ^ Dial, R.; Roughgarden, J. (1988). "Theory of marine communities: the intermediate disturbance hypothesis". *Ecology* **79**: 1412–1424.
2. ^ Grime, J.P. (1973). "Competitive exclusion in herbaceous vegetation". *Nature* **242** (5396): 344–347. doi:10.1038/242344a0.
3. ^ Horn, H.S. (1975). "Markovian properties of forest succession". In Cody, M.L. and Diamond, J. M.. *Ecology and evolution of communities*. Belknap Press, Massachusetts, USA. pp. 196–211. ISBN 0-674-22444-2.
4. ^ Connell, J.H. (1978). "Diversity in tropical rain forests and coral reefs". *Science* **199** (4335): 1302–1310. doi:10.1126/science.199.4335.1302. PMID 17840770.
5. ^ Wilkinson, D.M. (1999). "The disturbing history of intermediate disturbance". *Oikos* **84** (1): 145–147. doi:10.2307/3546874. JSTOR 3546874.
6. ^ Menge, B.A.; Sutherland, J.P. (1976). "Species diversity gradients: synthesis of the roles of predation, competition and temporal heterogeneity". *American Naturalist* **110** (973): 351–369. doi:10.1086/283073.
7. ^ Bongers, F.; Poorter, L.; Hawthorne, W.D.; Sheil, D. (2009). "The intermediate disturbance hypothesis applies to tropical forests, but disturbance contributes little to tree diversity". *Ecol. Lett.* **12** (8): 798–805. doi:10.1111/j.1461-0248.2009.01329.x. PMID 19473218.
8. ^ Sousa, W.P. (1979). "Disturbance in Marine Intertidal Boulder Fields: The Nonequilibrium Maintenance of Species Diversity". *Ecology* **60** (6): 1225–1239. doi:10.2307/1936969.
9. ^ Collins, S.L.; Barber, S.C. (1986). "Effects of disturbance on diversity in mixed-grass prairie". *Plant Ecology* **64** (2-3): 87–94. doi:10.1007/BF00044784.
10. ^ Collins, S.L.; Glenn, S.M.; Gibson, D.J. (1995). "Experimental Analysis of Intermediate Disturbance and Initial Floristic Composition: Decoupling Cause and Effect". *Ecology* **76** (2): 486–492. doi:10.2307/1941207.
11. ^ Lubchenco, L (1978). "Plant Species Diversity in a Marine Intertidal Community: Importance of Herbivore Food Preference and Algal Competitive Abilities". *American Naturalist* **112** (983): 23. doi:10.1086/283250.
12. ^ Denslow, J.S. (1985). "The disturbance-mediated co-existence of species". In Pickett, S.T.A. and White, P.S.. *Ecology of Natural Disturbance and Patch Dynamics*. Academic Press, Florida, USA.
13. ^ Roxburgh, S.H.; Shea, K.; Wilson, J.B. (2004). "The intermediate disturbance hypothesis:Patch dynamics and mechanisms of species coexistence". *Ecology* **85** (2): 359–371. doi:10.1890/03-0266.

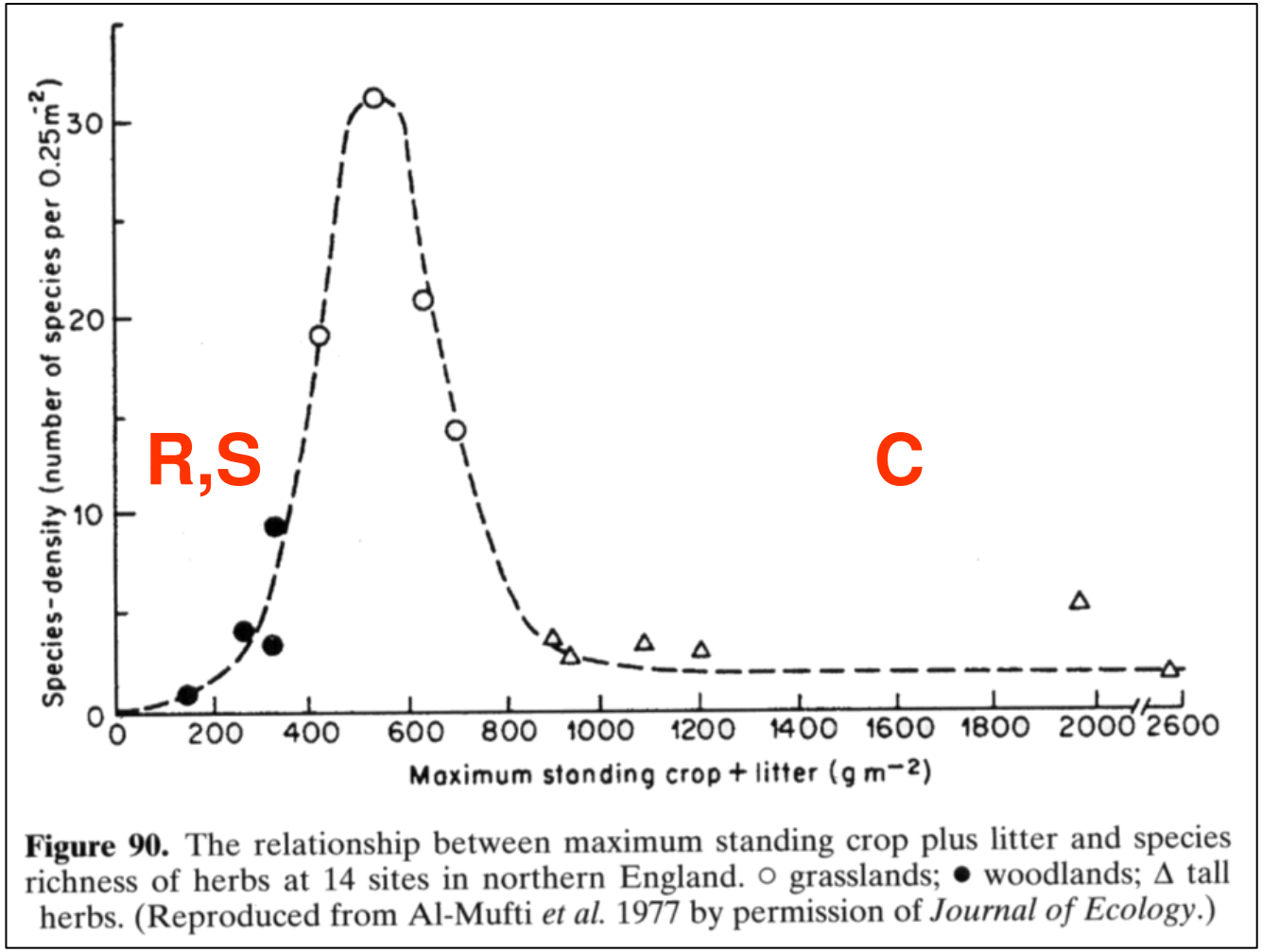


Figure 90. The relationship between maximum standing crop plus litter and species richness of herbs at 14 sites in northern England. ○ grasslands; ● woodlands; Δ tall herbs. (Reproduced from Al-Mufti *et al.* 1977 by permission of *Journal of Ecology*.)

biomassa epigea

biomassa ipogea

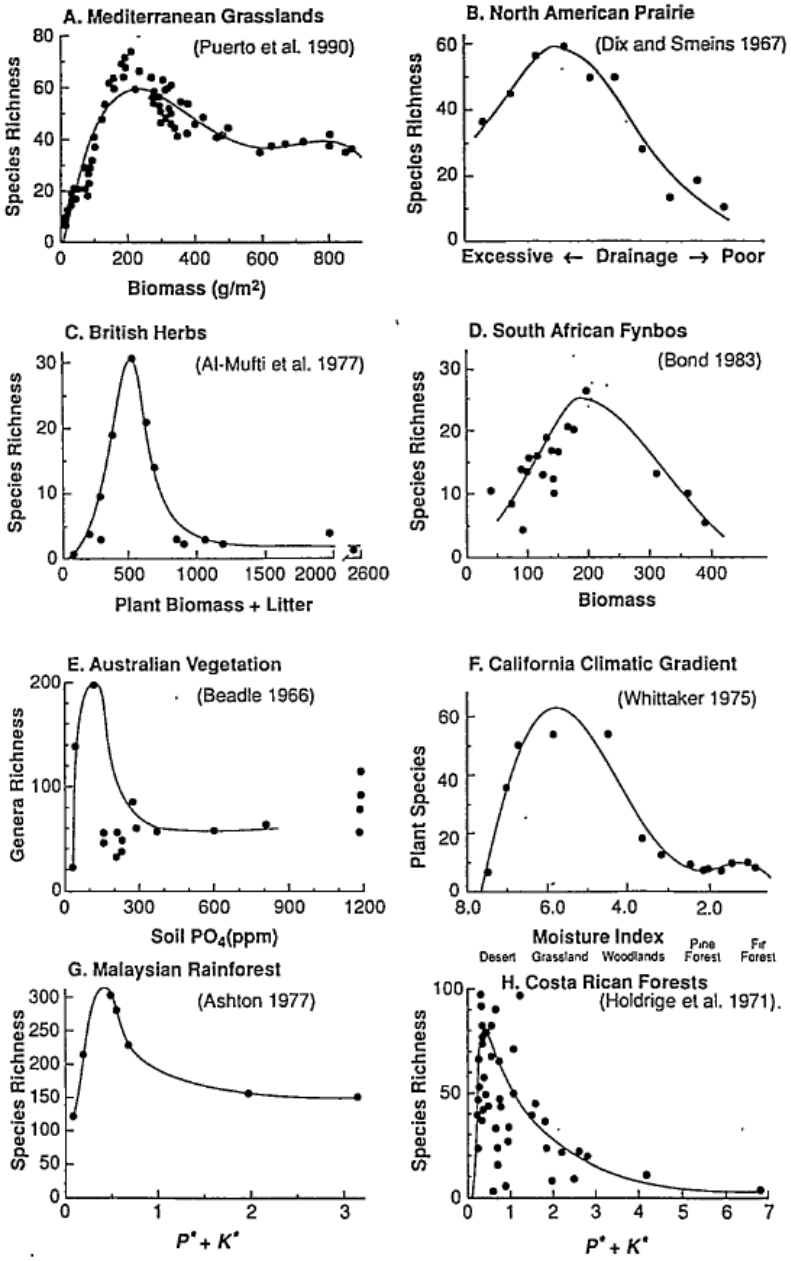


Figure 2.5 The observed relationships between species richness and measures of habitat productivity for a wide variety of plant communities. (A–F): Redrawn from Puerto et al. (1990), Dix and Smeins (1967), Al-Mufti et al. (1977), Bond (1983), Beadle (1966), and Whittaker (1975), respectively. Curves shown for (*A*), (*B*), and (*F*) were fit using polynomial regressions. (*G*) and (*H*) use data from Ashton (1977) and Holdrige et al. (1971), respectively, but were graphed in this manner, after data analysis, by Tilman (1982). P^* and K^* are normalized concentrations of soil phosphorus and potassium, which were summed to give an index of soil fertility.

Science
AAAS

Productivity Is a Poor Predictor of Plant Species Richness

Peter B. Adler, *et al.*

Science **333**, 1750 (2011);
DOI: 10.1126/science.1204498

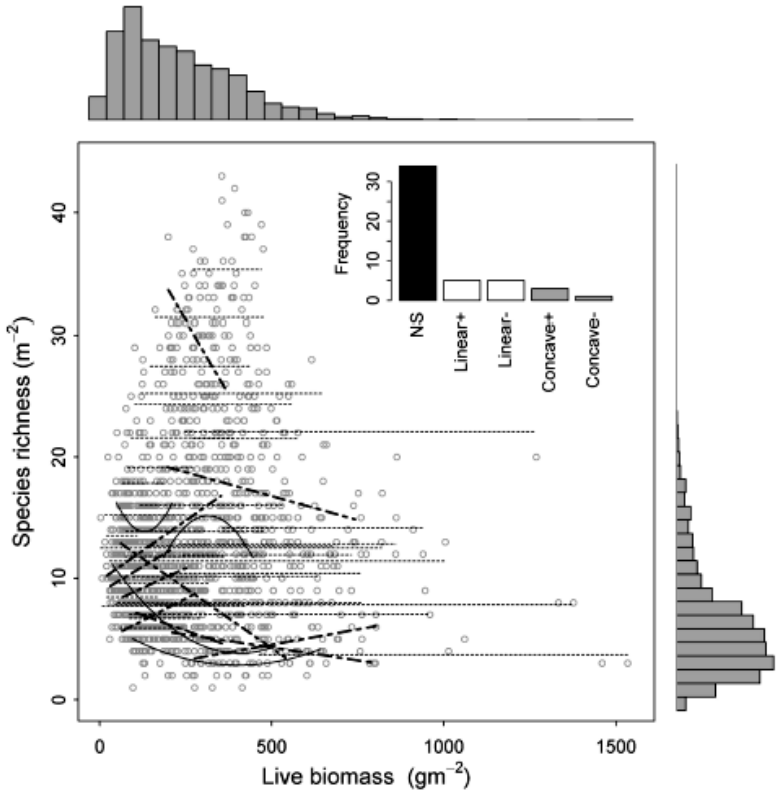


Fig. 2. Within-site relationships between productivity, measured as peak live biomass (dry weight) and species richness. The inset shows the frequencies of relationships that were nonsignificant (NS, thin dashed lines), positive or negative linear (thick dashed lines), and concave-up (+) or -down (–) (solid curves). Statistical results and separate figures for each of the 48 sites are available in table S2 and fig. S1, respectively. The marginal histograms show the frequency of species richness and peak live biomass across all sites.

Functional Ecology

British Ecological Society

Functional Ecology 2014, **28**, 253–257 doi: 10.1111/1365-2435.12147

Science AAAS

Comment on "Productivity Is a Poor Predictor of Plant Species Richness"
Jason D. Fridley *et al.*
Science **335**, 1441 (2012);
DOI: 10.1126/science.1215042

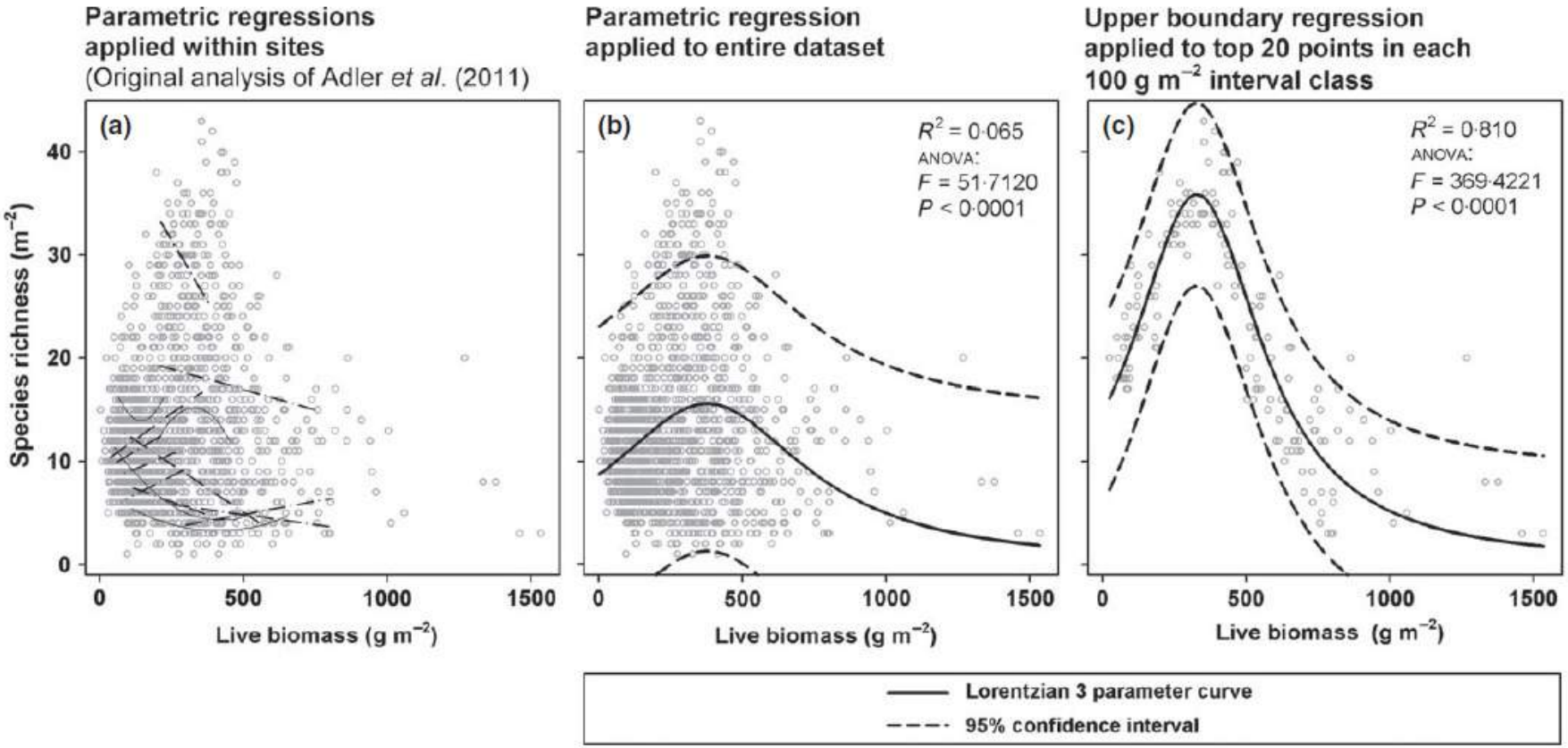
COMMENTARY

Implications for biodiversity conservation of the lack of consensus regarding the humped-back model of species richness and biomass production

Simon Pierce*

Comment on "Productivity Is a Poor Predictor of Plant Species Richness"

Jason D. Fridley,[1]* J. Philip Grime,[2] Michael A. Huston,[3] Simon Pierce,[4] Simon M. Smart,[5] Ken Thompson,[2] Luca Börger,[6] Rob W. Brooker,[7] Bruno E.L. Cerabolini,[8] Nicolas Gross,[6] Pierre Liancourt,[9] Richard Michalet,[10] Yoann Le Bagousse-Pinguet[10]



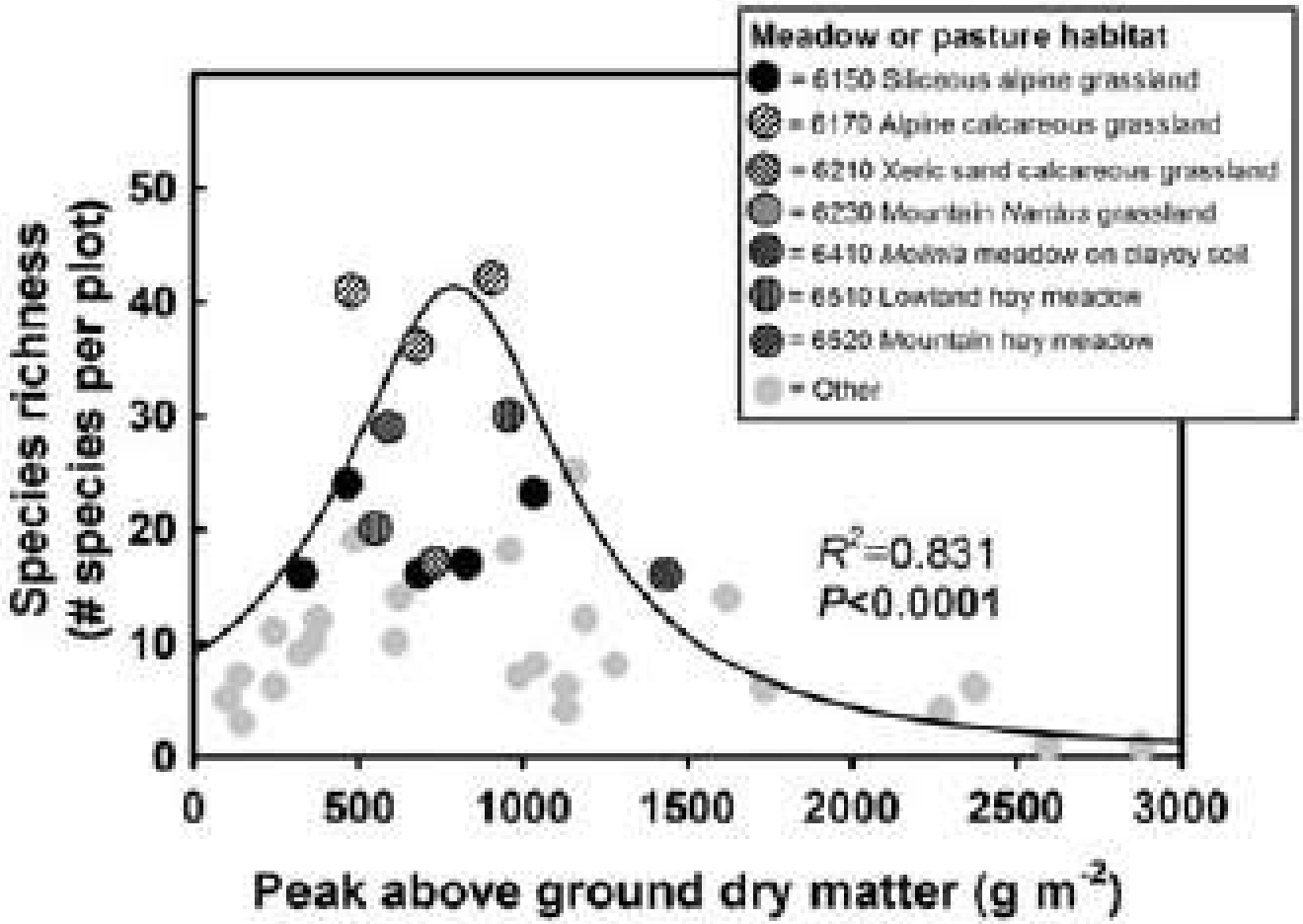
ORIGINAL ARTICLE

Plant Biosystems, 2016
Vol. 150, No. 3, 550–557, http://dx.doi.org/10.1080/11263504.2014.987848

Taylor & Francis
Taylor & Francis Group

Why are many anthropogenic agroecosystems particularly species-rich?

B. E. L. CERABOLINI[1], S. PIERCE[2], A. VERGINELLA[1,3], G. BRUSA[1], R. M. CERIANI[4], & S. ARMIRAGLIO[3]



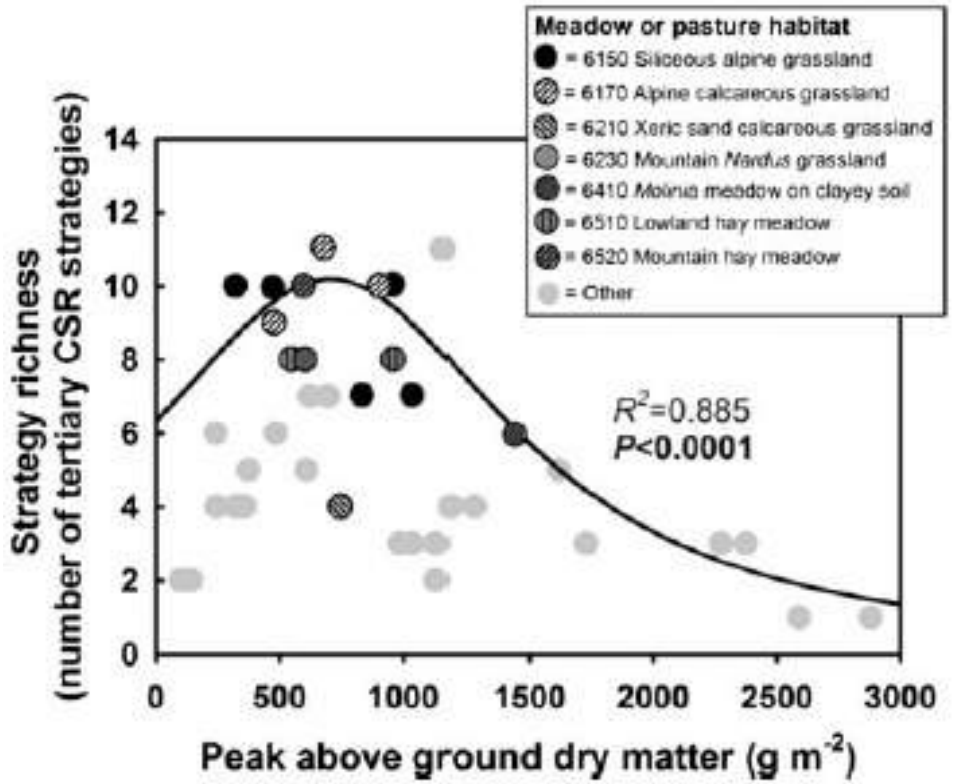
ORIGINAL ARTICLE

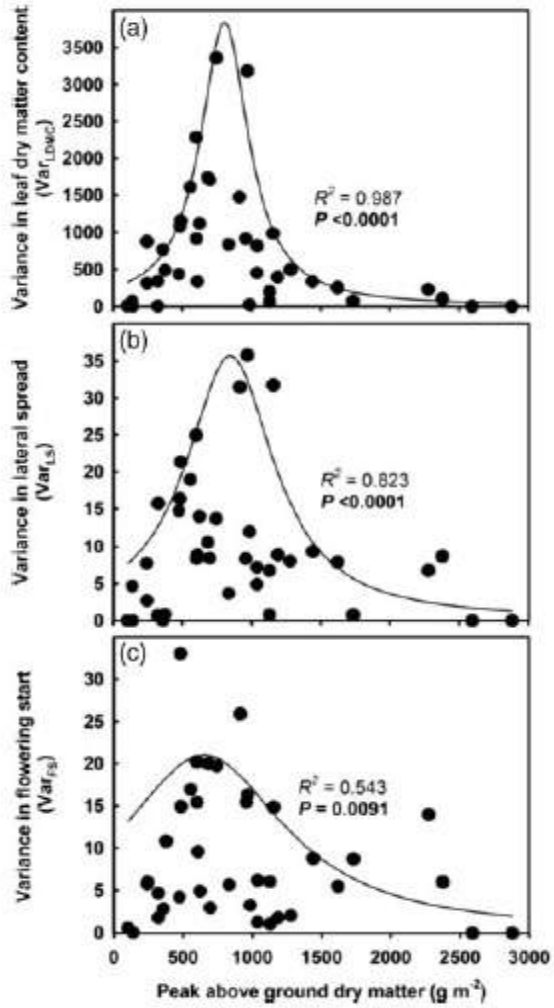
Plant Biosystems, 2016
Vol. 150, No. 3, 550–557, http://dx.doi.org/10.1080/11263504.2014.987848

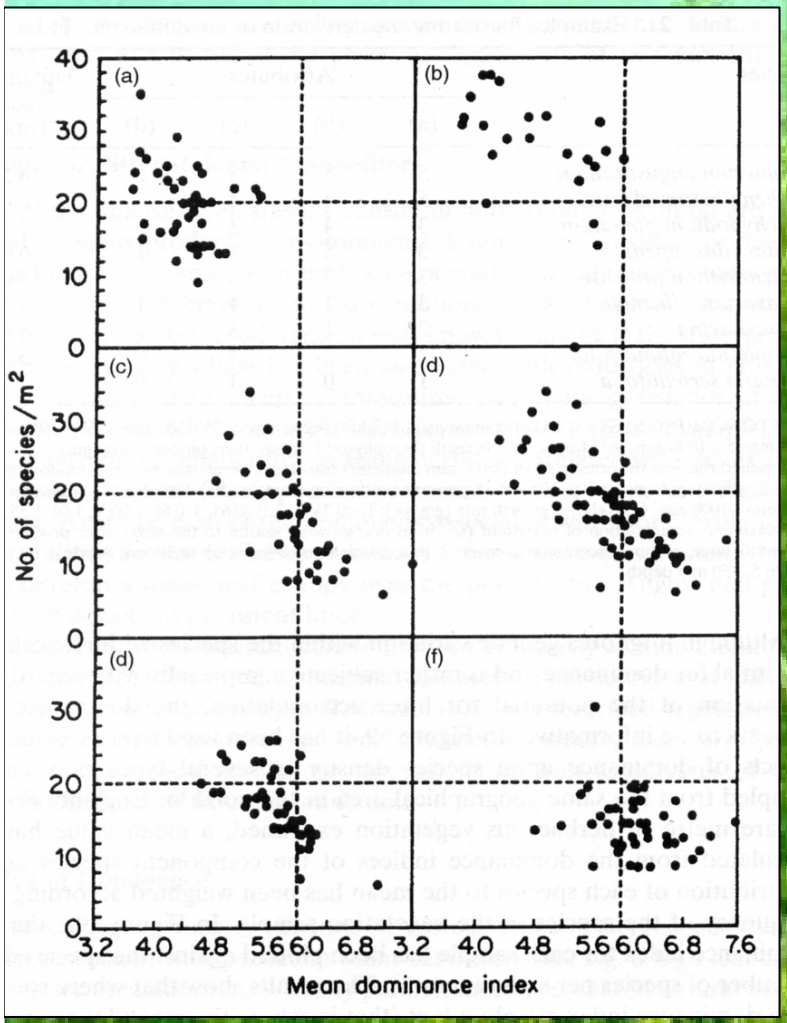
Taylor & Francis
Taylor & Francis Group

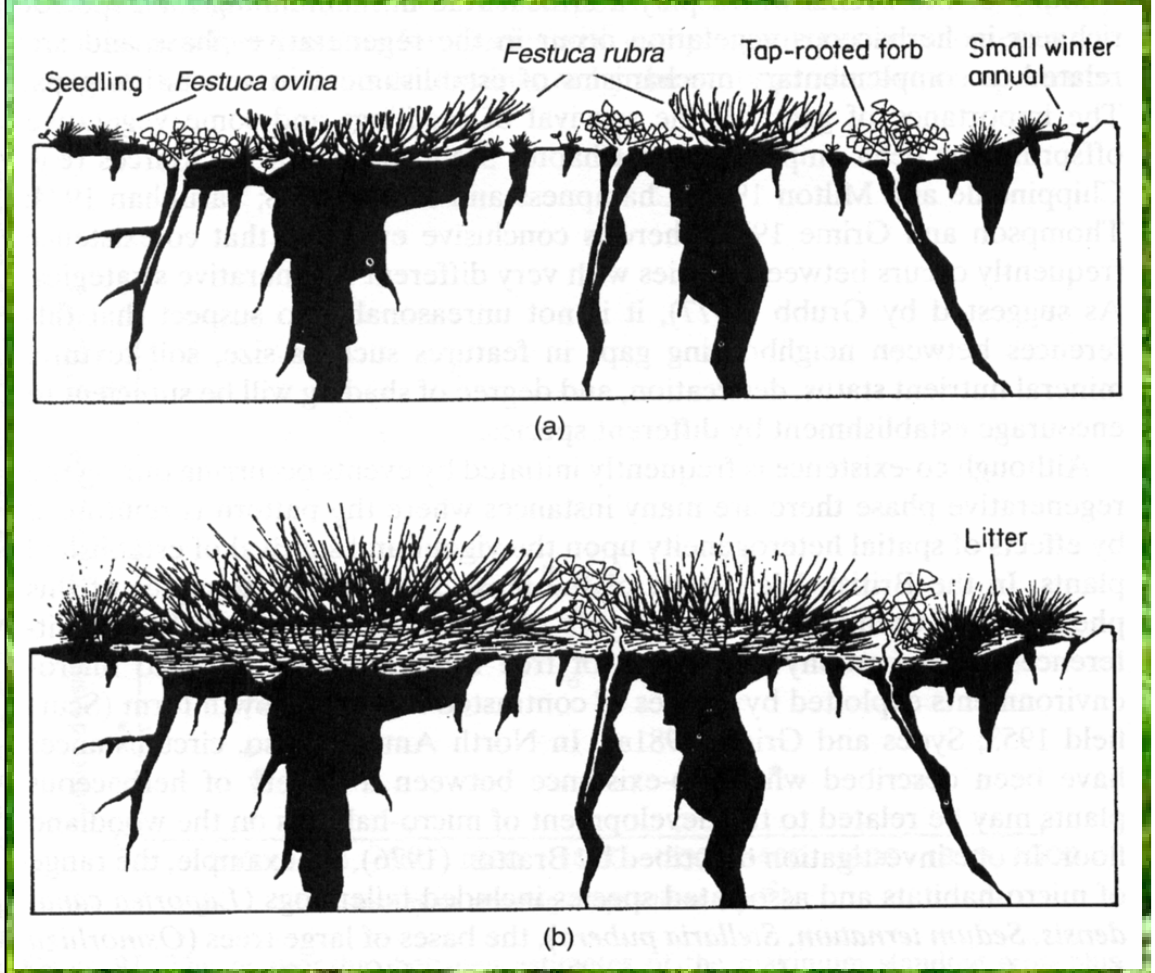
Why are many anthropogenic agroecosystems particularly species-rich?

B. E. L. CERABOLINI[1], S. PIERCE[2], A. VERGINELLA[1,3], G. BRUSA[1], R. M. CERIANI[4], & S. ARMIRAGLIO[3]






(a)
(b)
(c)
(d)
(d)
(f)
No. of species / m²
Mean dominance index
3.2 4.0 4.8 5.6 6.0 6.8 3.2 4.0 4.8 5.6 6.0 6.8 7.6


Seedling
Festuca ovina
Festuca rubra
Tap-rooted forb
Small winter annual
(a)
Litter
(b)

OIKOS 111: 112–118, 2005

Functional richness, functional evenness and functional divergence: the primary components of functional diversity

Norman W. H. Mason, David Mouillot, William G. Lee and J. Bastow Wilson

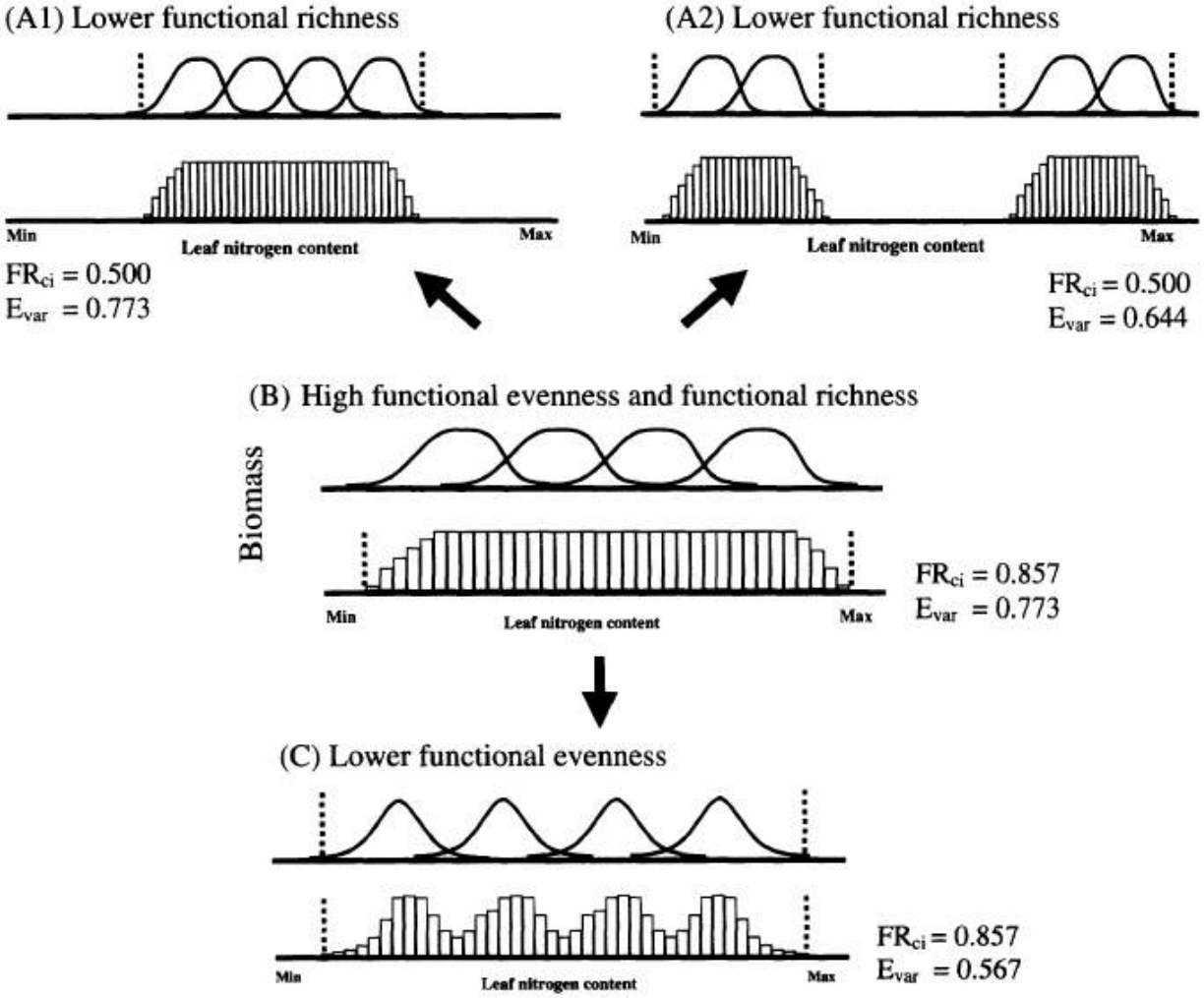
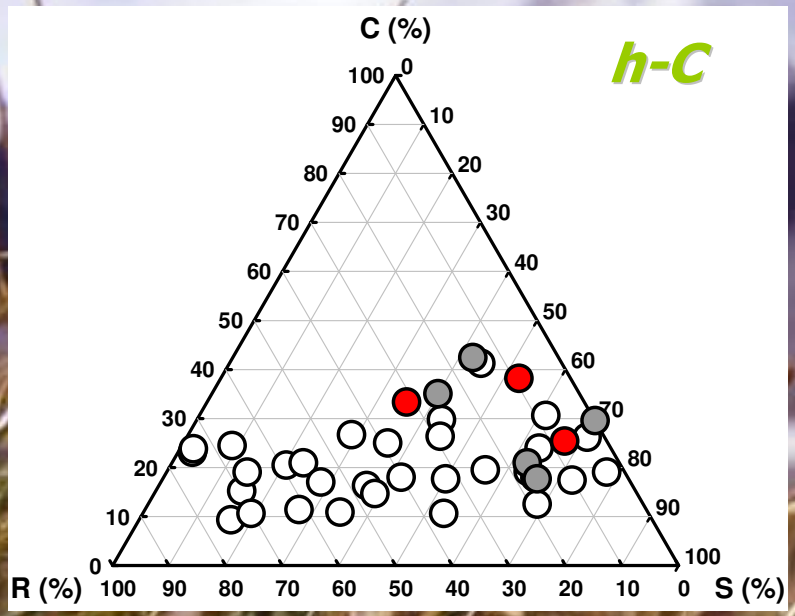


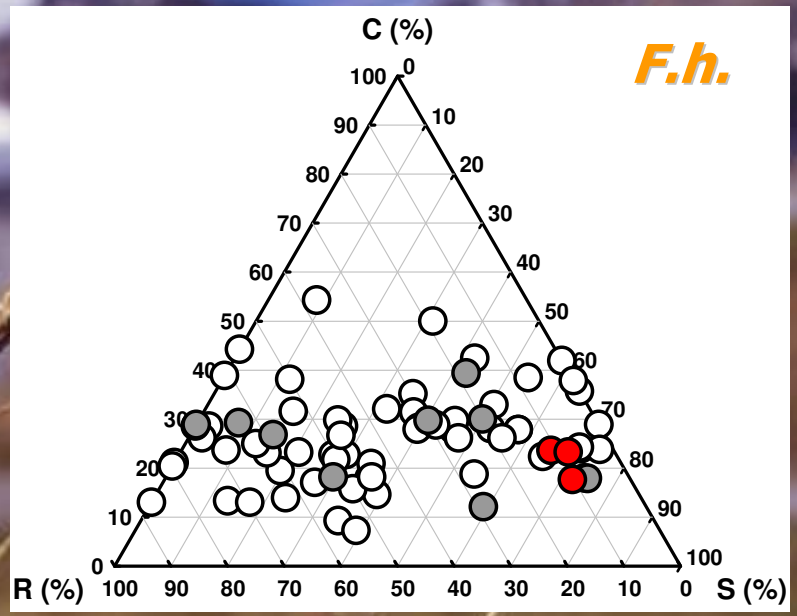
Fig. 2. Functional richness and functional evenness. The vertical axes represent abundance (e.g. biomass). The bell-shaped curves indicate the distribution of the abundance of individual species in niche space. The histograms indicate the summed abundance of the species occurring in each functional character category (i.e. equal-width sections of the functional character range). The vertical dotted lines indicate the amount of niche space filled by the species together. Functional richness can decrease without a change in functional evenness if the evenness of abundance within the niche space is unchanged (going from B to A1). Similarly, functional evenness can decrease without a change in functional richness if the amount of niche space filled is unchanged (going from B to C).

Journal of Ecology 2007
95, 698–706

Disturbance is the principal α-scale filter determining niche differentiation, coexistence and biodiversity in an alpine community

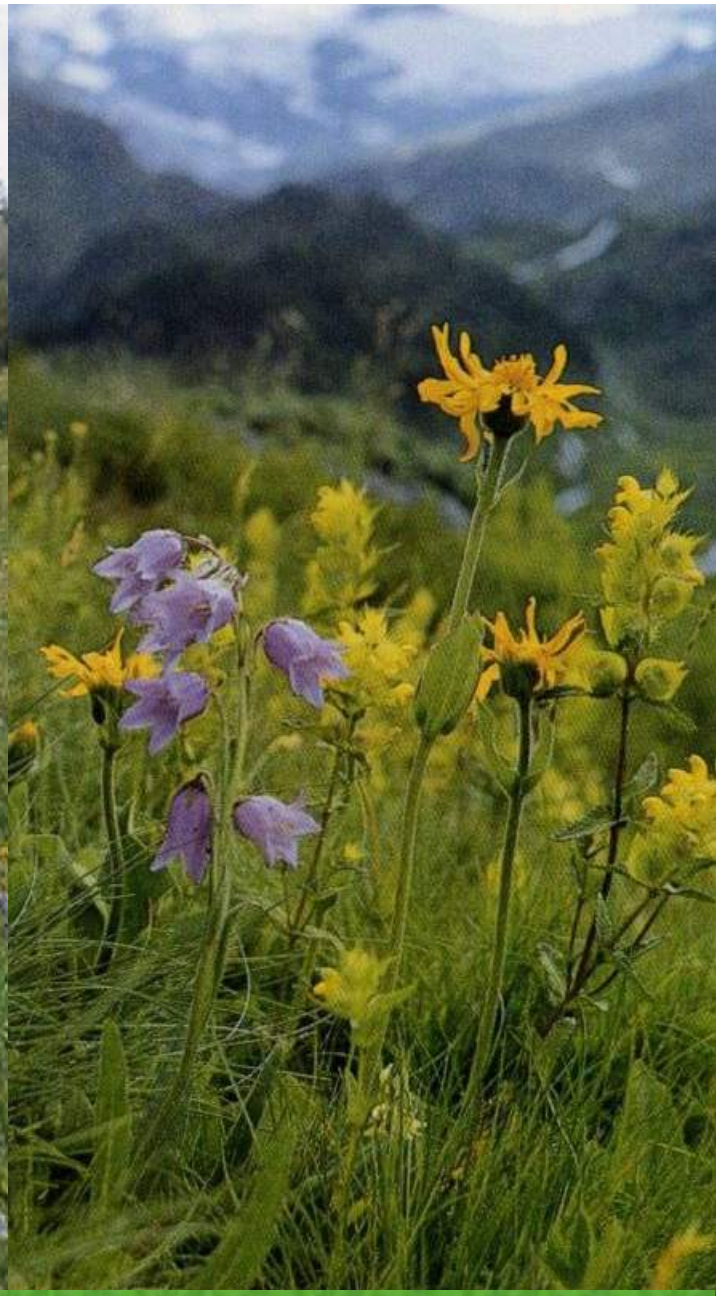
SIMON PIERCE, ALESSANDRA LUZZARO, MARCO CACCIANIGA*, ROBERTA M. CERIANI† and BRUNO CERABOLINI





6150 Formazioni erbose boreo-alpine silicicole

6230* Formazioni erbose a *Nardus*, ricche di specie, su substrato siliceo delle zone montane (e submontane)

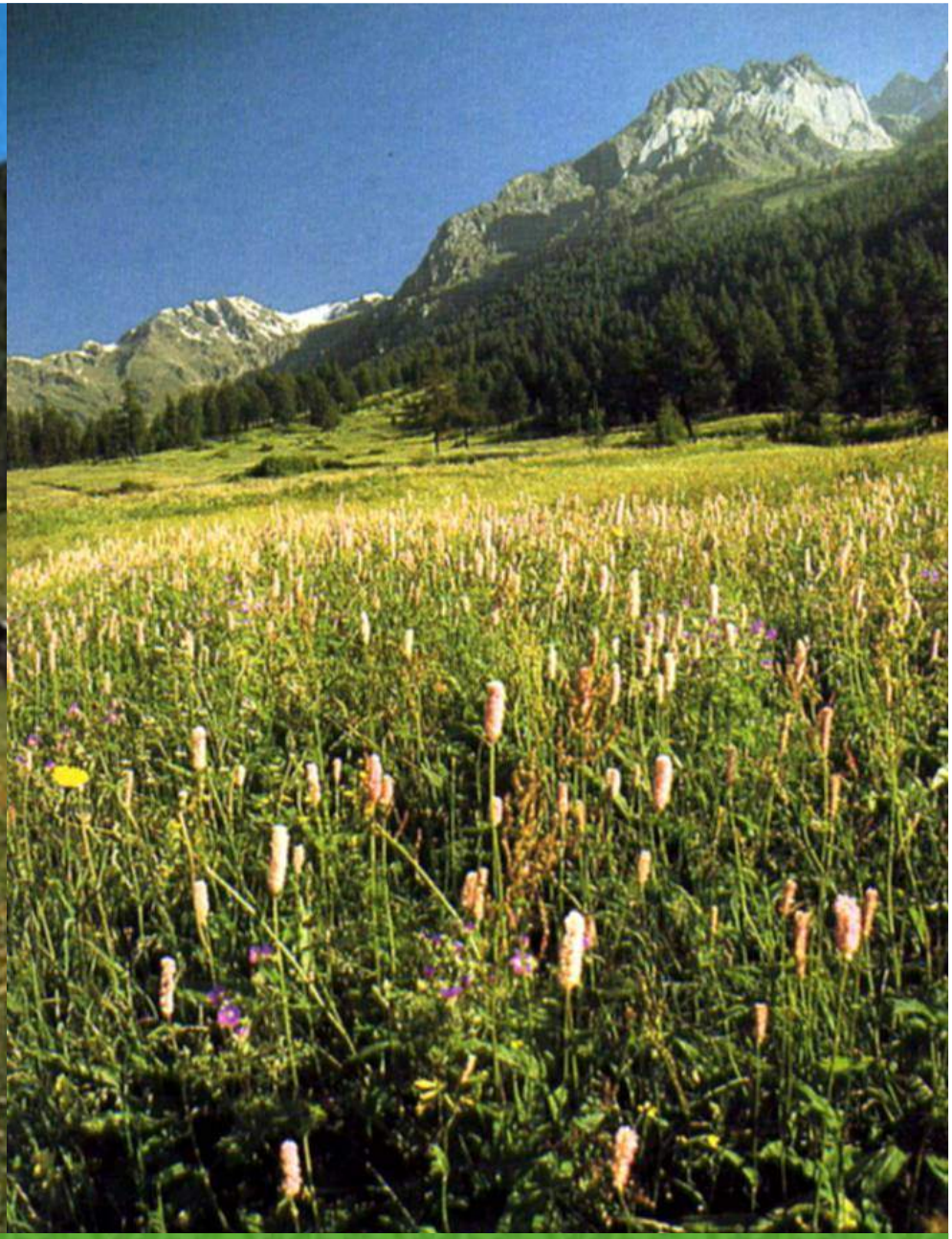


natura che vale
BIODIVERSITÀ, RICCHEZZA DELLA LOMBARDIA

LIFE GESTIRE 2020 - Nature Integrated Management to 2020.
Lo sforzo integrato per Rete Natura 2000 e la sua diversità in Lombardia

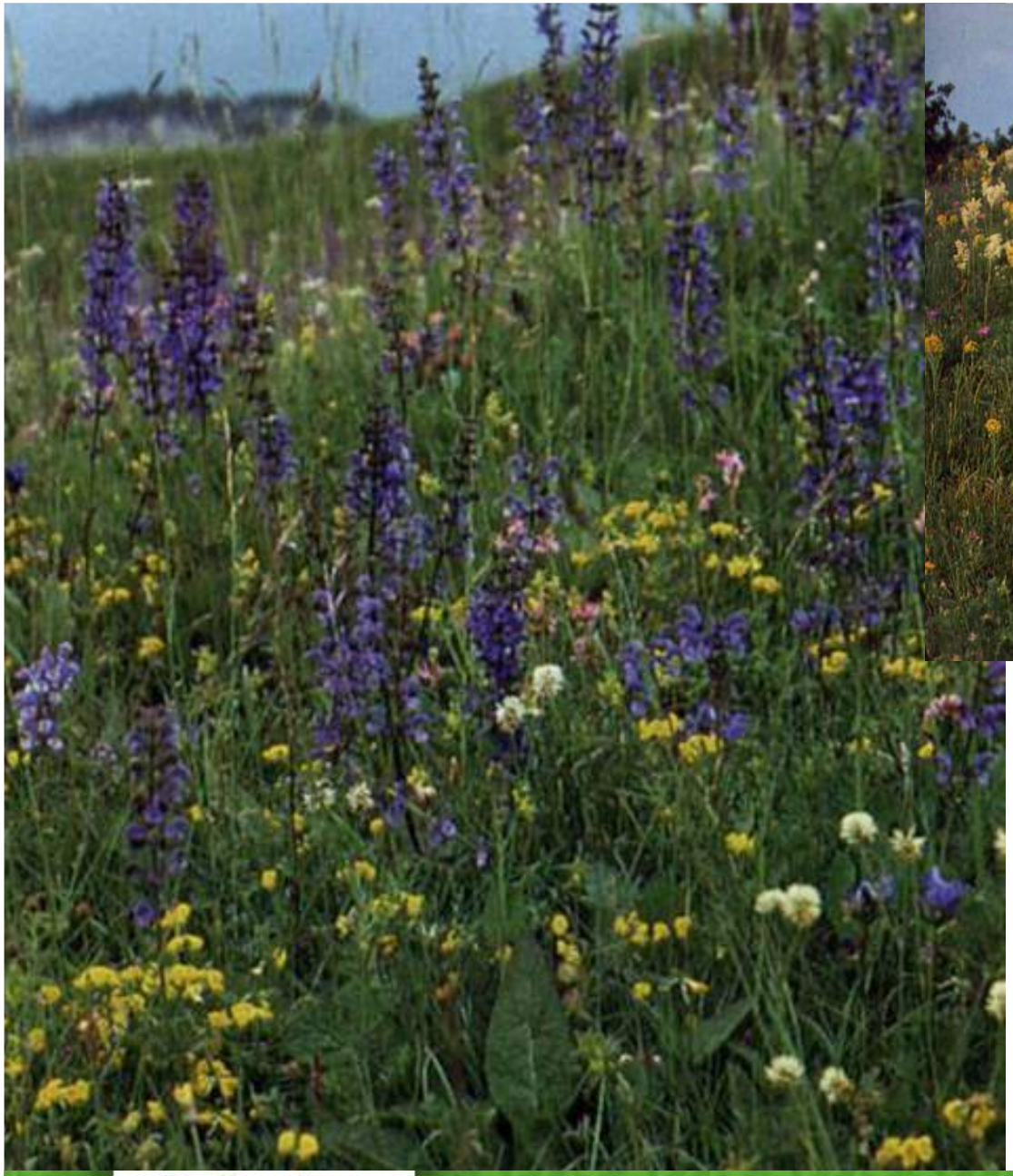
natura che vale
BIODIVERSITÀ, RICCHEZZA DELLA LOMBARDIA

LIFE GESTIRE 2020 - Nature Integrated Management to 2020.
Lo sfondo integrato per Rete Natura 2000 e la biodiversità in Lombardia



natura che vale
BIODIVERSITÀ, RICCHEZZA DELLA LOMBARDIA

LIFE GESTIRE 2020 - Nature Integrated Management to 2020.
La strategia integrata per Rete Natura 2000 e la sua diversità in Lombardia



natura che vale
BIODIVERSITÀ, RICCHEZZA DELLA LOMBARDIA

grazie per l'attenzione