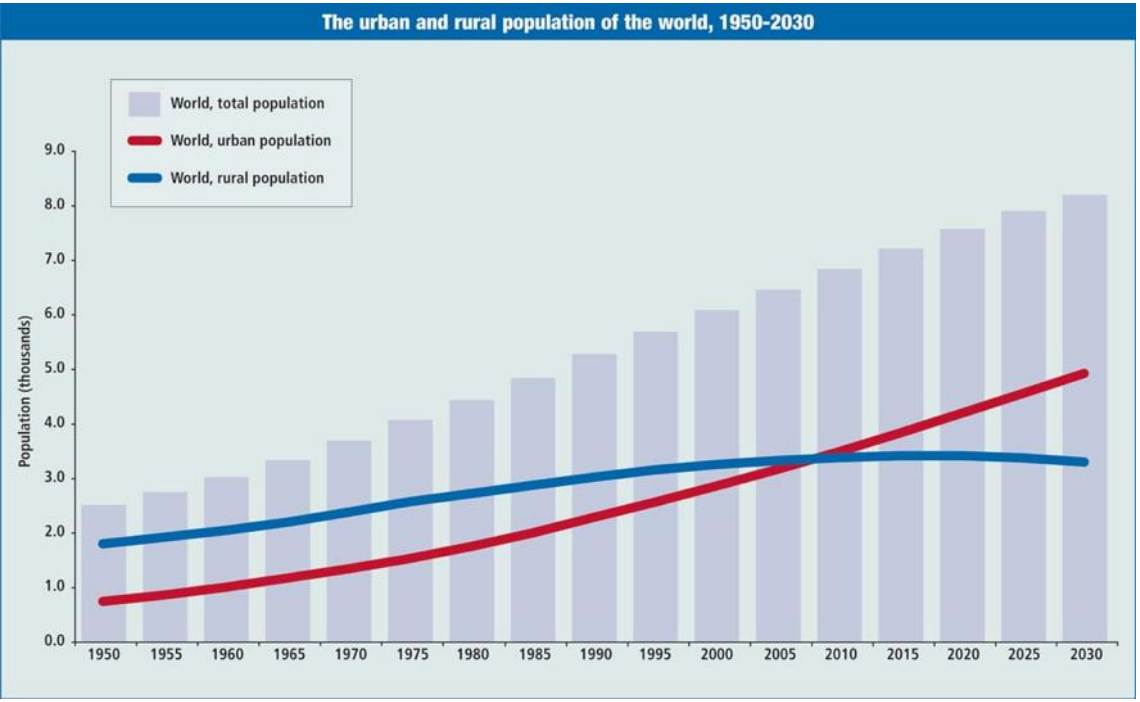
Paesaggi vegetali urbani

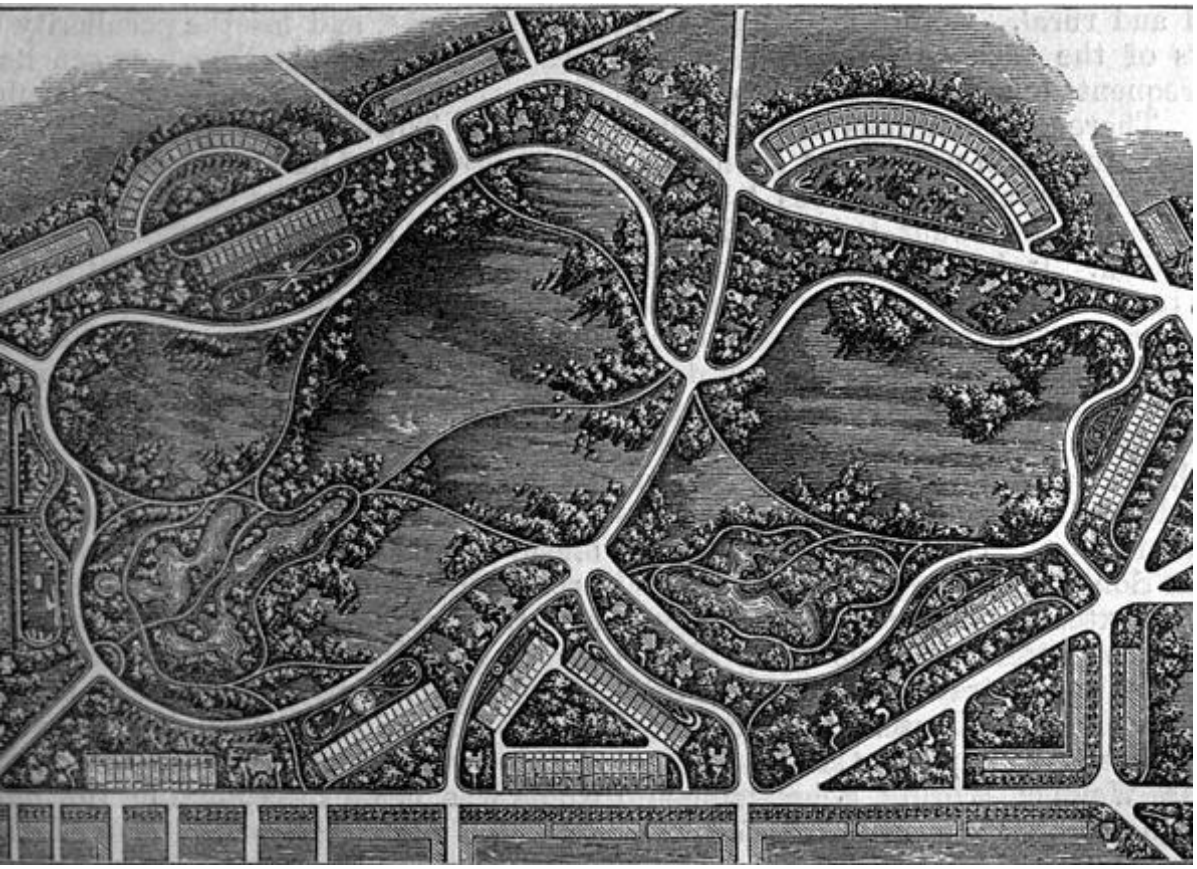
Paolo Semenzato

La vegetazione nelle città

Il verde urbano costituisce una porzione estremamente modesta del paesaggio vegetale del pianeta, tuttavia è quella più immediatamente disponibile a oltre il 50% della popolazione mondiale.



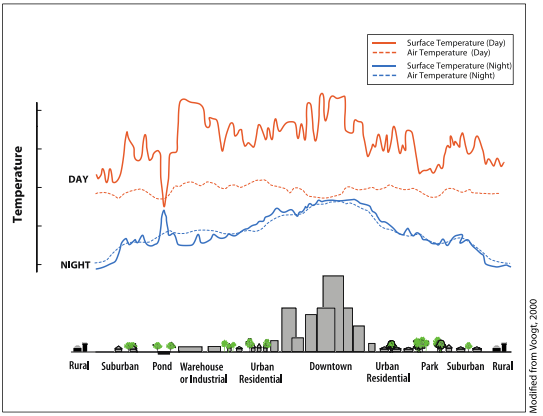
La vegetazione nelle città



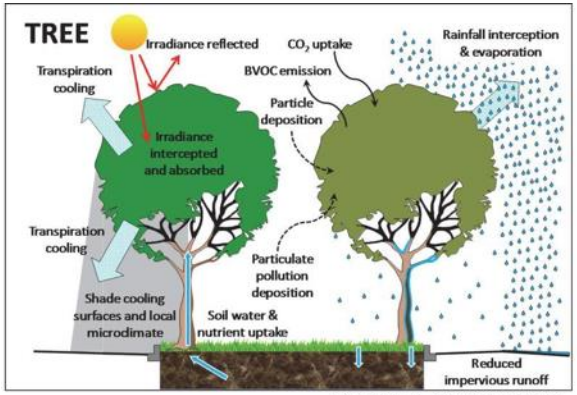
Da una funzione prevalentemente estetica

La vegetazione nelle città

Figure 2: Variations of Surface and Atmospheric Temperatures

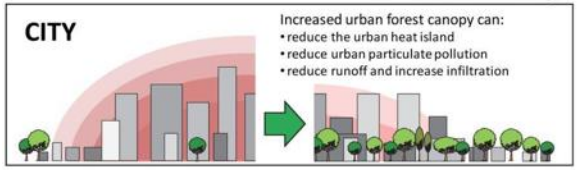


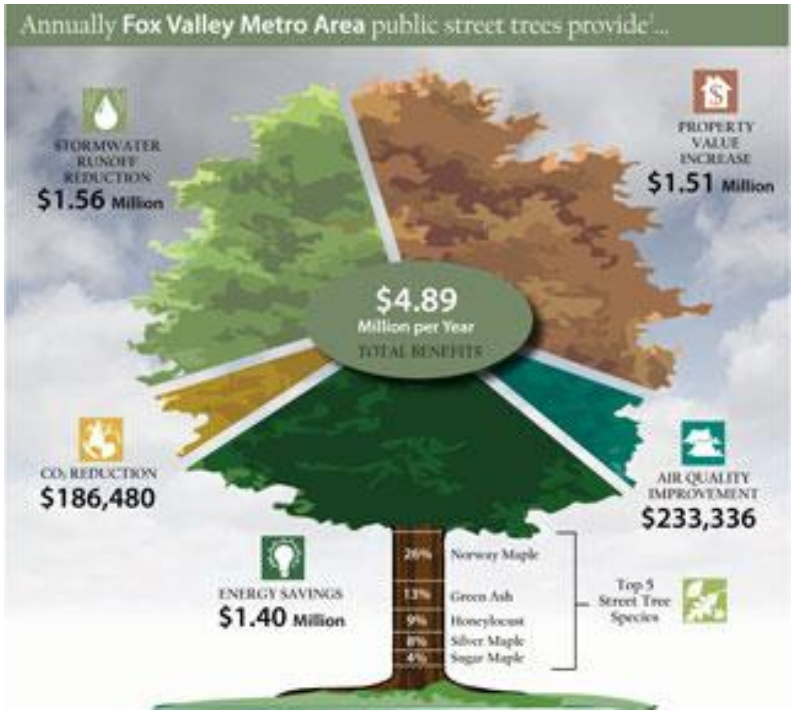
Modified from Voogt, 2000



BVOC = Biological volatile organic compounds

WSUD = Water Sensitive Urban Design

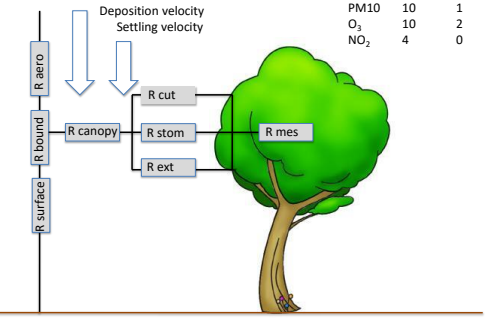




Deposition of particles and gases

Deposition velocity mm/s

	trees	concrete
PM10	10	1
O_3	10	2
NO_2	4	0



i-Tree Tools for Assessing and Managing **Community Forests**

Ad una prevalente funzione ambientale

La vegetazione nelle città

THE MILLION TREE PROJECT

million trees LA

million trees NYC

La quantificazione dei servizi ecosistemici è stata una leva per intraprendere programmi che possono modificare considerevolmente il paesaggio urbano

Linee di ricerca: Quantificare i servizi ecosistemici

Sviluppare modelli per la stima dei servizi ambientali degli alberi urbani

- Fornire dati di riferimento sulla crescita degli alberi urbani e relazioni allometriche per differenti regioni
- Stimarela *canopy* e l' area fogliare in diversi scenari

ELSEVIER

Urban Forestry & Urban Greening

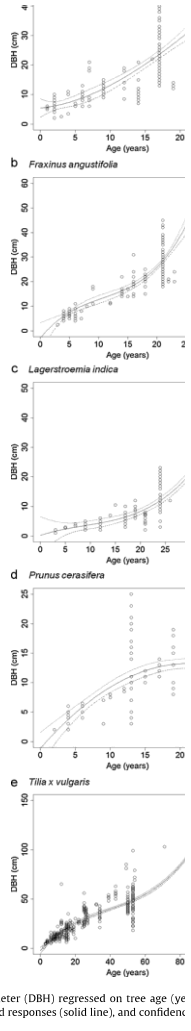
journal homepage: www.elsevier.de/ufug

Growth prediction for five tree species in an Italian urban forest

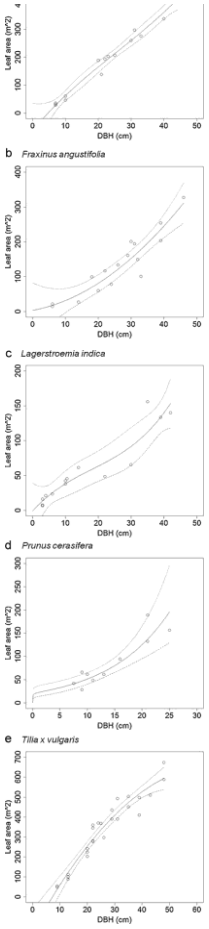
Paolo Semenzato*, Dina Cattaneo, Matteo Dainese

Department TeSAF, University of Padova, Viale dell'Università 16, 35020 Legnaro, PD, Italy

Species	Model	a	b_1	b_2	b_3	R^2	RM
DBH vs. age							
Acer platanoides	$y = a + b_1x + b_2x^2 + b_3x^3$	1.636	0.205	−0.049	0.056	0.760	0.3
Fraxinus angustifolia	$y = a + b_1x + b_2x^2 + b_3x^3$	0.847	1.159	−0.480	0.121	0.907	0.2
Lagerstroemia indica	$y = a + b_1x + b_2x^2 + b_3x^3$	−0.965	2.596	−1.316	0.262	0.746	0.3
Prunus cerasifera	$y = a + b_1x + b_2x^2$	−0.300	1.395	−0.155	–	0.532	0.4
Tilia x vulgaris	$y = a + b_1x + b_2x^2 + b_3x^3$	−0.738	2.601	−0.690	0.083	0.910	0.2
Height vs. DBH							
Acer platanoides	$y = a + b_1x + b_2x^2 + b_3x^3$	2.454	−2.227	1.160	−0.152	0.548	0.3
Fraxinus angustifolia	$y = a + bx$	1.063	0.303	–	–	0.575	0.1
Lagerstroemia indica	$y = a + b_1x + b_2x^2 + b_3x^3$	0.643	1.290	−0.782	0.146	0.156	0.3
Prunus cerasifera	$y = a + b_1x + b_2x^2 + b_3x^3$	−0.873	3.569	−1.885	0.320	0.093	0.3
Tilia x vulgaris	$y = a + b_1x + b_2x^2 + b_3x^3$	1.512	−0.469	0.303	−0.031	0.638	0.2
Crown diameter vs. DBH							
Acer platanoides	$y = a + b_1x + b_2x^2 + b_3x^3$	0.602	−0.843	0.718	−0.098	0.791	0.2
Fraxinus angustifolia	$y = a + b_1x + b_2x^2 + b_3x^3$	−3.579	4.862	−1.630	0.193	0.579	0.2
Lagerstroemia indica	$y = a + b_1x + b_2x^2 + b_3x^3$	−1.248	1.604	−0.504	0.086	0.616	0.4
Prunus cerasifera	$y = a + b_1x + b_2x^2 + b_3x^3$	−3.771	6.425	−3.149	0.523	0.434	0.3
Tilia x vulgaris	$y = a + b_1x + b_2x^2$	−0.801	0.901	−0.039	–	0.800	0.2
Leaf area vs. DBH							
Acer platanoides	$y = a + b_1x + b_2x^2 + b_3x^3$	2.865	−1.445	1.215	−0.163	0.982	0.1
Fraxinus angustifolia	$y = a + b_1x + b_2x^2$	1.906	0.064	0.247	–	0.883	0.3
Lagerstroemia indica	$y = a + b_1x + b_2x^2 + b_3x^3$	−3.195	7.726	−2.973	0.400	0.909	0.3
Prunus cerasifera	$y = a\,(e^{bx} - 1)$	3.036	0.090	–	–	0.802	0.2
Tilia x vulgaris	$y = a + b_1x + b_2x^2$	−4.801	5.321	−0.629		0.965	0.1



Tree diameter (DBH) regressed on tree age (ye
), predicted responses (solid line), and confidenc
l lines).



nts
5%

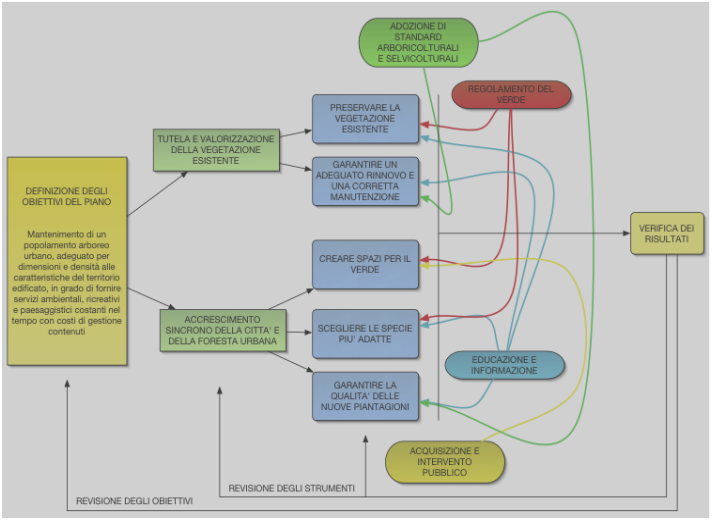
Fig. 2. Tree leaf area regressed on tree diameter (DBH). Actual measure (points), predicted responses (solid line), and confidence intervals at a level (dotted lines).

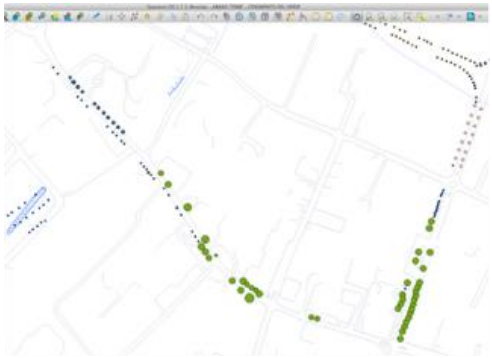
Linee di ricerca: Gestire i popolamenti per massimizzare i servizi

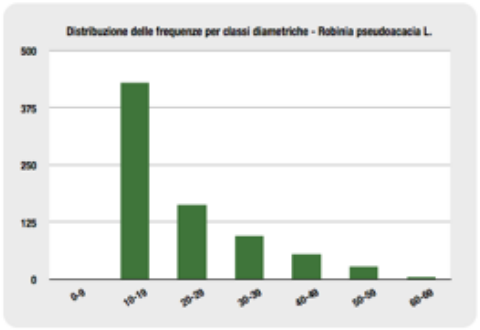
3.8 I BOSCHI URBANI: VERSO UN INVENTARIO NAZIONALE

C. Serenelli - Accademia Italiana di Scienze Forestali
F. Salbitano - Università degli Studi di Firenze
G. Sanesi - Università degli studi di Bari
P. Semenzato - Università degli studi di Padova

È stata quindi condotta un'indagine su un campione di 31 Comuni scelti tra quelli oggetto di studio nell'ambito del Rapporto ISPRA "Qualità dell'ambiente urbano", essendo per questi già disponibili alcuni dati potenzialmente utili (dati sul verde e sugli strumenti di governo, per es.). Nello specifico, il campione è costituito dalle 20 città più popolose in ogni Regione[34] più altre 11 scelte tra i Comuni con più di 60.000 abitanti. I casi studio su cui è stata effettuata l'analisi, tramite raccolta dati, questionario e contatti diretti con gli uffici comunali, sono dunque: Ancona, Aosta, Bari, Bologna, Bolzano, Cagliari, Campobasso, Catania, Firenze, Genova, L'Aquila, Lucca, Milano, Napoli, Padova, Palermo, Parma, Perugia, Pesaro, Pescara, Piacenza, Potenza, Reggio Calabria, Roma, Terni, Torino, Trento, Trieste, Venezia, Verona, Viterbo.







COMUNE DI CHIOGGIA

LE QUATTRO SPECIE PIU' DIFFUSE

Considerando il territorio comunale nel suo complesso 4 specie delle 71 presenti costituiscono più del 50% del popolamento per numero di soggetti. Si tratta di specie particolarmente adatte ad ambienti marini: la tamerice, presente con oltre il 17% degli individui complessivi, il leccio con il 13%, la robinia, presente soprattutto a Chioggia città e il pino domestico entrambi con il 12%. Delle altre specie nessuna supera il 4% in termini di abbondanza relativa.

LE SPECIE PIU' IMPORTANTI

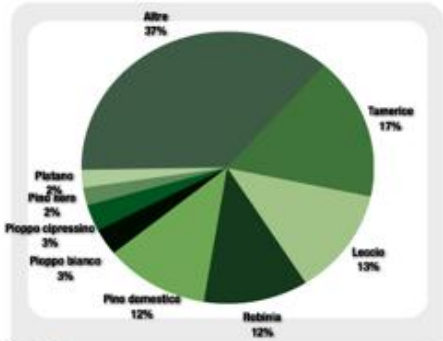
Considerando l'indice di importanza delle specie la situazione non cambia sostanzialmente. Le quattro specie più' abbondanti sono anche le più importanti. Cambia l'ordine in cui si collocano, poiche' le specie con maggior sviluppo della chioma scavalcano nella graduatoria quelle di dimensioni più contenute. Il pino domestico e' la specie più importante, con una dominanza relativa del 20%.

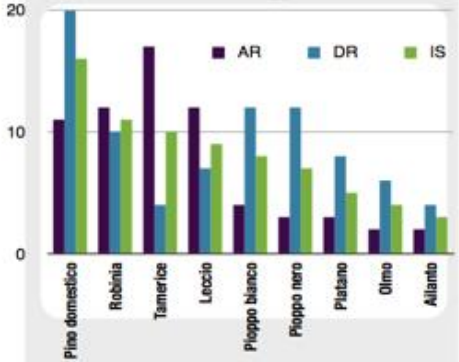
NUMERO DI SPECIE 71

INDICI DI DIVERSITA'

SHANNON -WIENER	1,04
SDI	12,57

COMPOSIZIONE E DIVERSITA' DEL POPOLAMENTO ARBOREO





La vegetazione nelle città

Agli alberi urbani è però attribuito un valore che va ben oltre ai benefici ambientali che essi producono

Linee di ricerca: Percezione e benessere

Contents lists available at ScienceDirect

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

Research Paper

Go greener, feel better? The positive effects of biodiversity on the well-being of individuals visiting urban and peri-urban green areas

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[b] Department of Human Studies, Libera Università Maria Ss. Assunta (LUMSA), Italy
[c] Department of Agricultural and Environmental Science, University of Bari, Italy
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HIGHLIGHTS

- We assess benefits and well-being deriving from visiting urban and peri-urban green areas.
- We examine how biodiversity of urban and peri-urban green areas affects well-being.
- Biodiversity positively affects well-being, especially for urban green areas.
- Length of visit to green areas and biodiversity predict well-being through the mediation of perceived restorativeness.
- Urban green spaces rich in biodiversity can enhance well-being and promote sustainable lifestyles.

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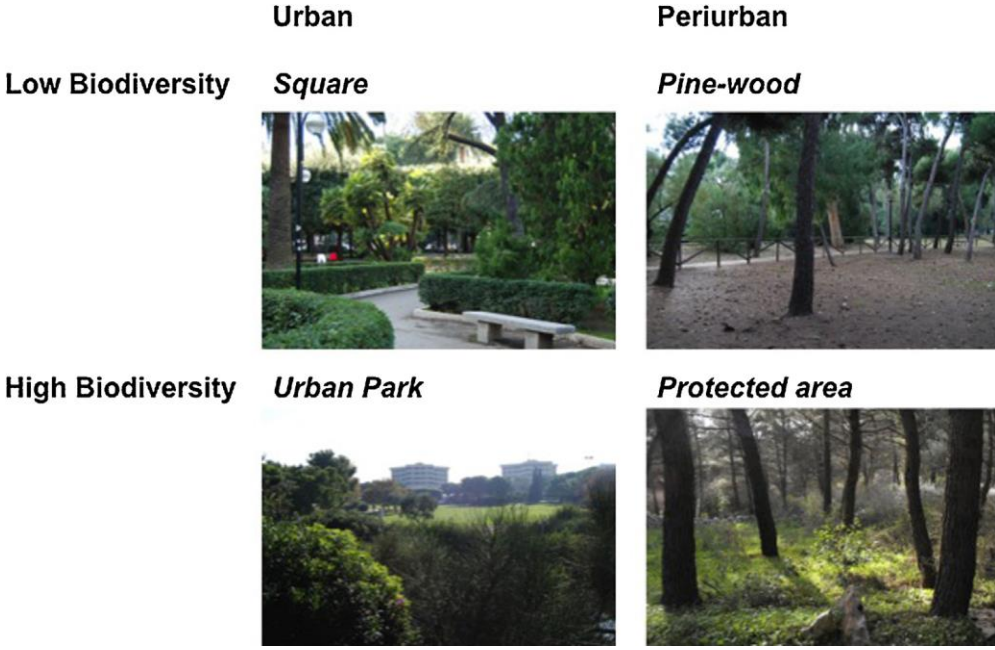
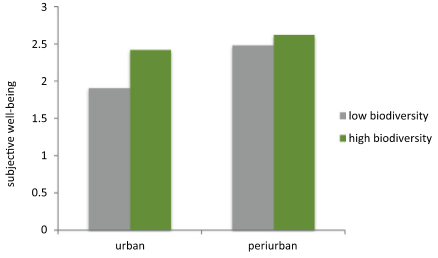
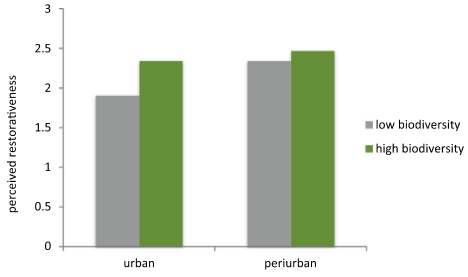
ABSTRACT

The literature on human experience in green environments had widely showed the positive outcomes getting in contact with nature. This study addresses the issue of whether urban residents' evaluations urban and peri-urban natural settings and the positive outcomes deriving from contact with such settin vary as a function of their biodiversity. A field study assessed benefits and subjective well-being report by urban residents visiting four different typologies of green spaces, selected on the basis of urban forest expert criteria according to a 2 × 2 factorial design. The biodiversity level (low vs. high) was cross with the setting location (urban vs. peri-urban) as follows: urban squares with green elements, urb parks, pinewood forest plantations, and peri-urban natural protected areas. A questionnaire includi measures of length and frequency of visits, perceived restorativeness, and self-reported benefits of t visit to the green spaces was administered in situ to 569 residents of four Italian medium-to-large si cities: Bari, Florence, Rome and Padua. Results showed the positive role of biodiversity upon perceiv restorative properties and self-reported benefits for urban and peri-urban green spaces. Consistently wi the hypotheses reported herein, a mediation role of perceived restorativeness in the relation betwe experience of natural settings (i.e. higher level of biodiversity) and self-reported benefits was found. T design and management implications of the findings are discussed.





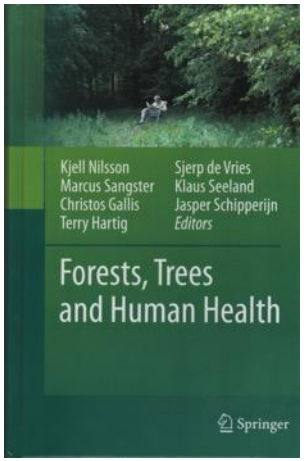


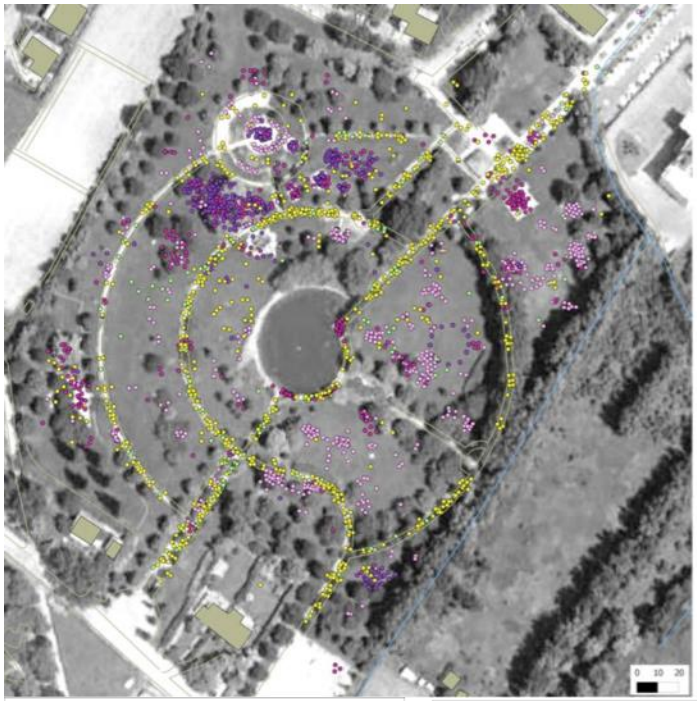
ricerca: Percezione e benessere

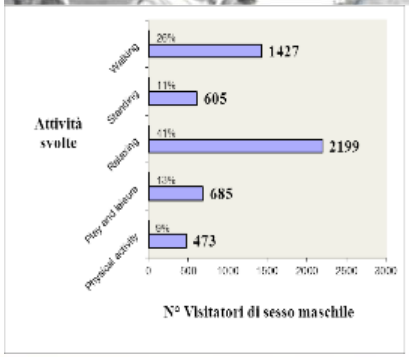
Chapter 9
Natural Elements and Physical Activity in Urban Green Space Planning and Design

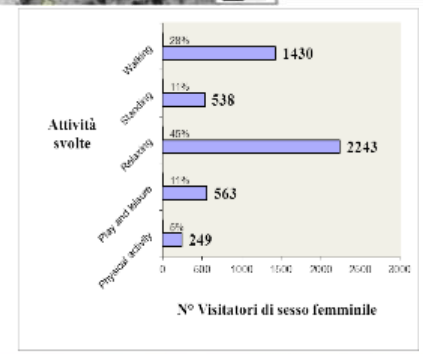
Paolo Semenzato, Tuija Sievänen, Eva Silveirinha de Oliveira, Ana Luisa Soares, and Renate Spaeth

Abstract While studies on physical activity behavior are widely available, research on physical activity environments is relatively new, particularly when related to 'natural' environments. In this chapter planning issues and design elements that can influence the use of urban green areas for physical activity are discussed. Availability, features, conditions, safety, aesthetics and climatic comfort are the main characteristics of urban green areas considered in the discussion, particularly in relation to natural elements. In the first part of the chapter the current literature presenting scientific evidence is examined. Once this evidence is discussed examples of best practices and significant planning and design solutions concerning the most relevant attributes of the green spaces are presented.



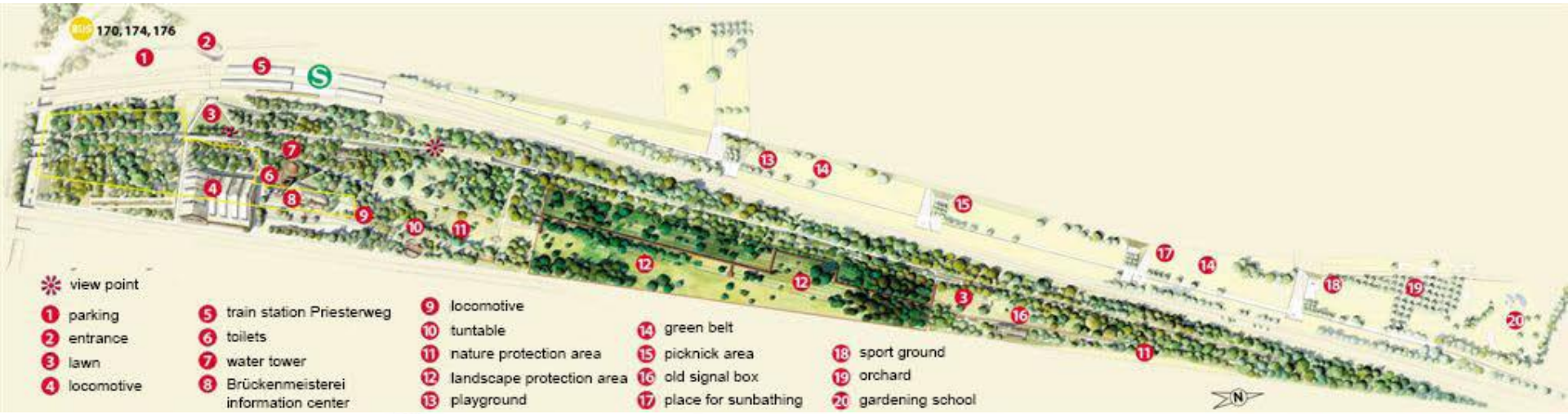




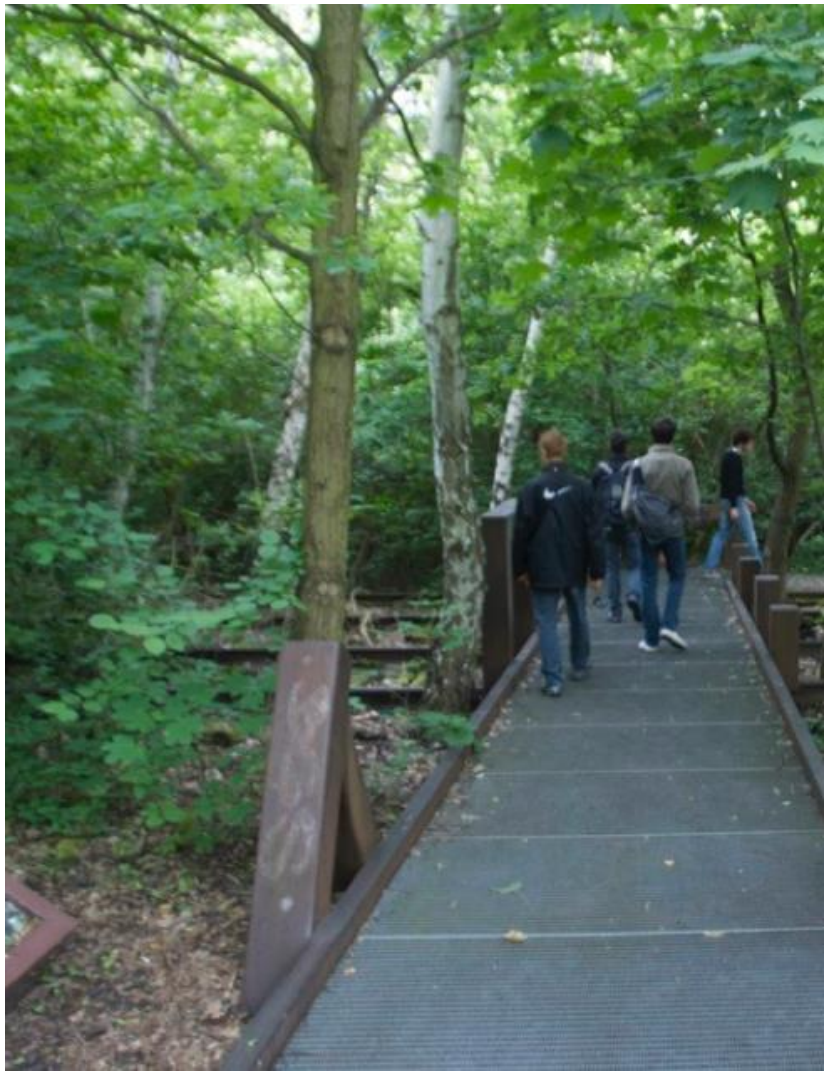


Abbandono degli spazi urbani e "nuove foreste"

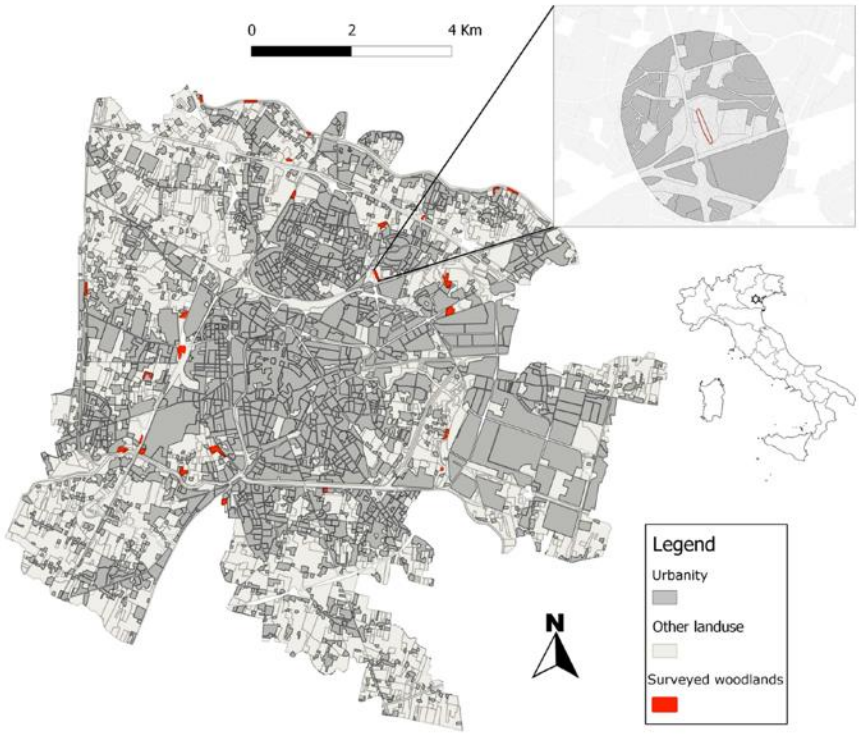
Types of Forests	*Types of Ecosystem*	*Types of "Nature"*
Remnants of pristine forests	Pristine ecosystems	Nature 1: "old wilderness"
Forests characterised by human management/planting	Ecosystems shaped by forestry and agriculture	Nature 2: "traditional cultural landscape"
Planted tree stands in green spaces such as parks	Ecosystems established by urban planning	Nature 3: "functional greening"
Woodland succession on urban industrial sites	Ecosystems evolved naturally on urban industrial sites	Nature 4: "new wilderness"

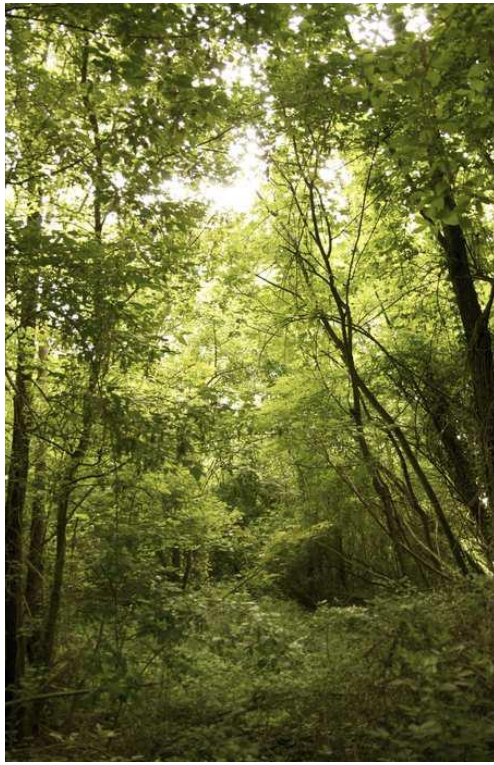


Abbandono degli spazi urbani e "nuove foreste"



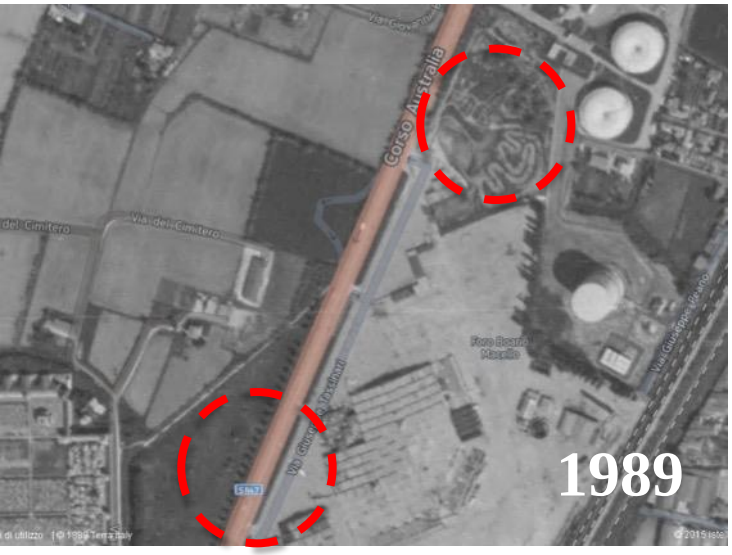
Abbandono degli spazi urbani e "nuove foreste"

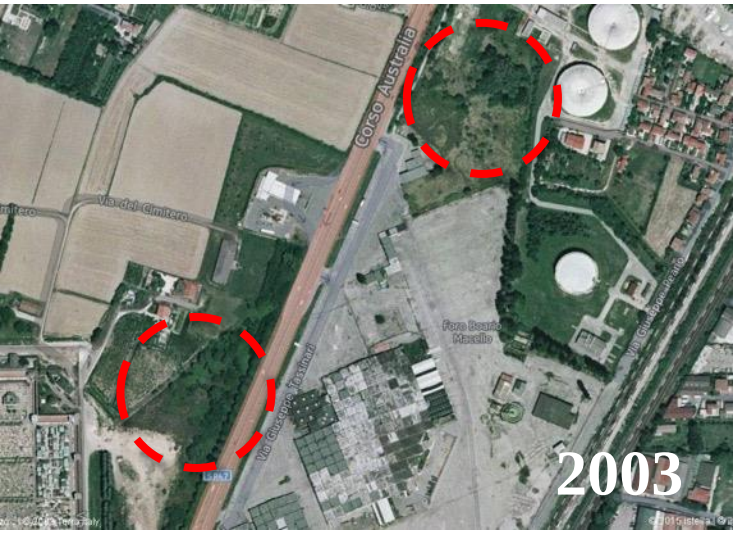


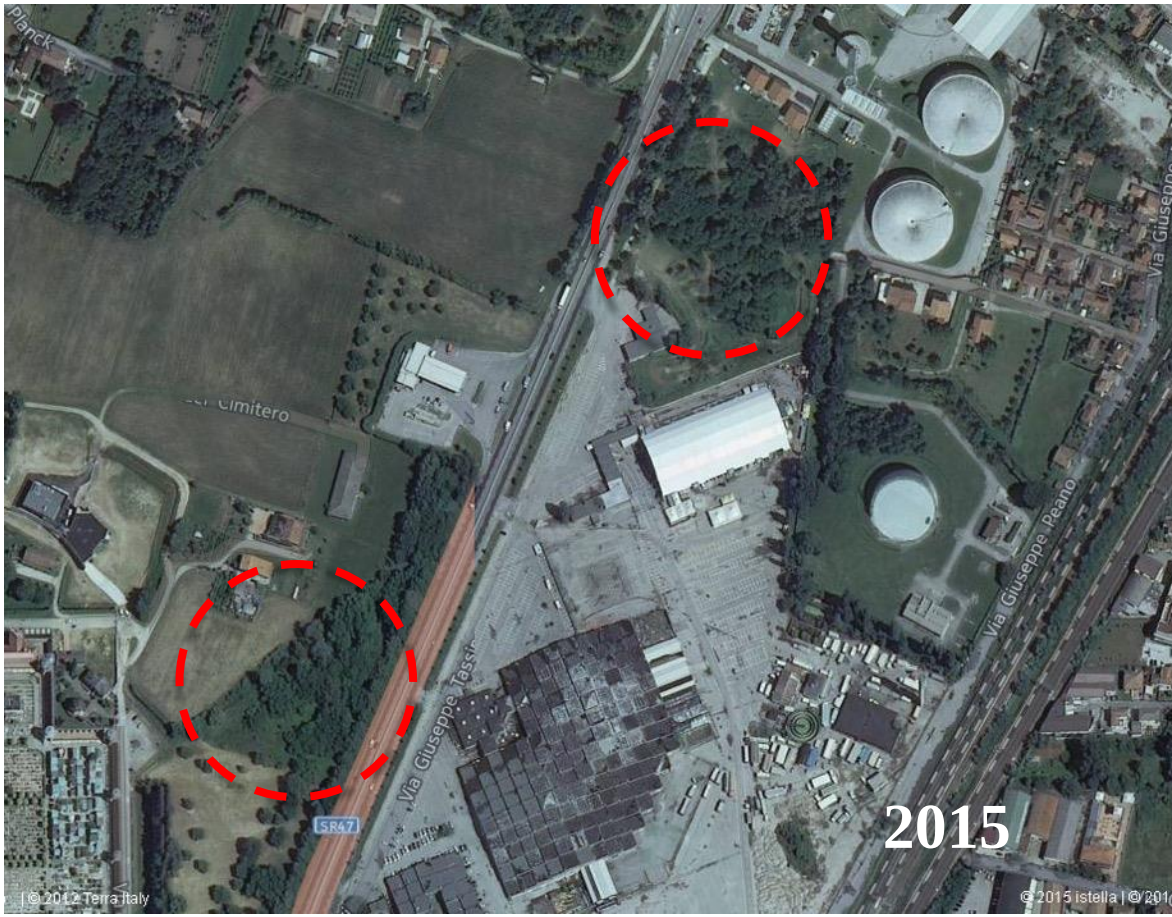


Superficie media poco più di ½ ettaro
in media 18 specie legnose di cui 11 autoctone e 7 esotiche
un totale di 66 specie legnose su circa 19 ettari

Abbandono degli spazi urbani e "nuove foreste"







- da 10-30 anni
- Invasione da alcuni impianti

Sitzia T. et al., 2015

Conservazione del verde storico e degli alberi monumentali

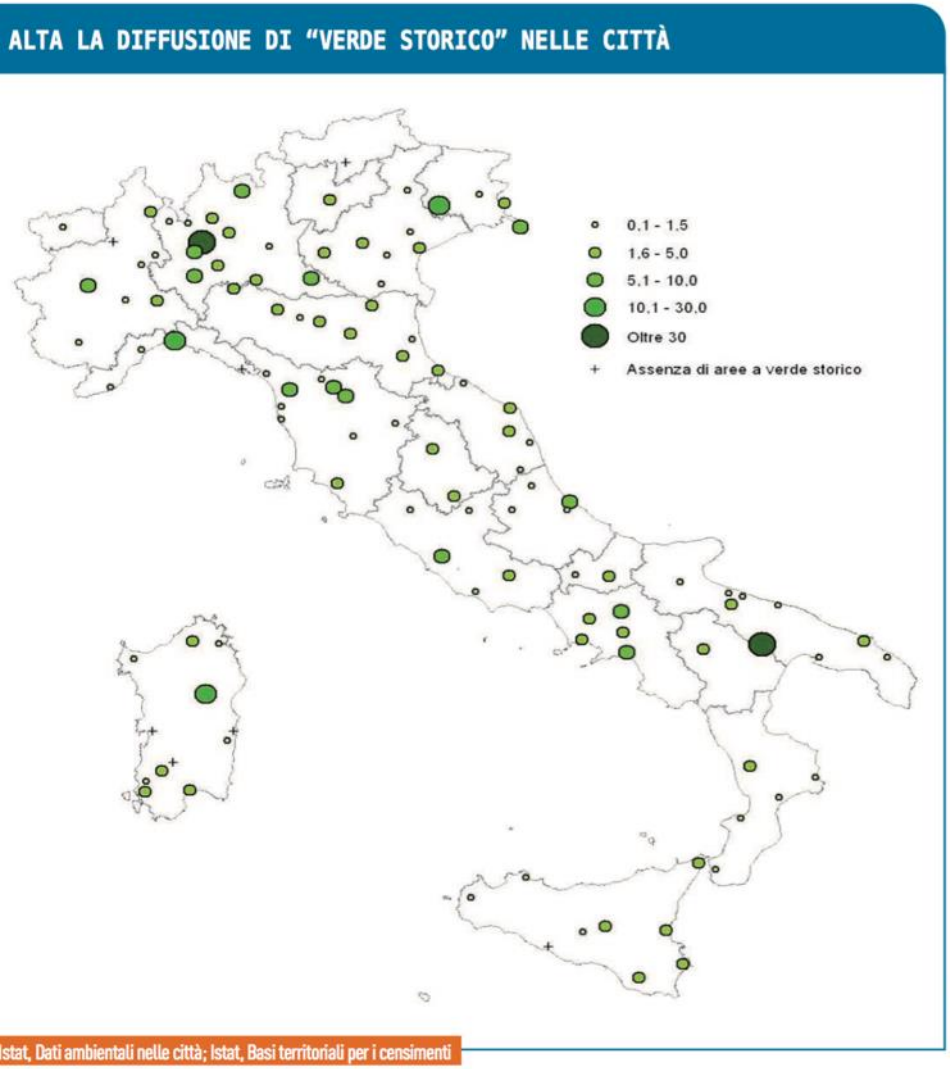


FIGURA 8. Densità delle aree di "verde storico" nei comuni capoluogo di provincia (a). Anno 2012. Valori percentuali sulla superficie dei centri abitati

(a) Dati provvisori

Conservazione del verde storico e degli alberi monumentali

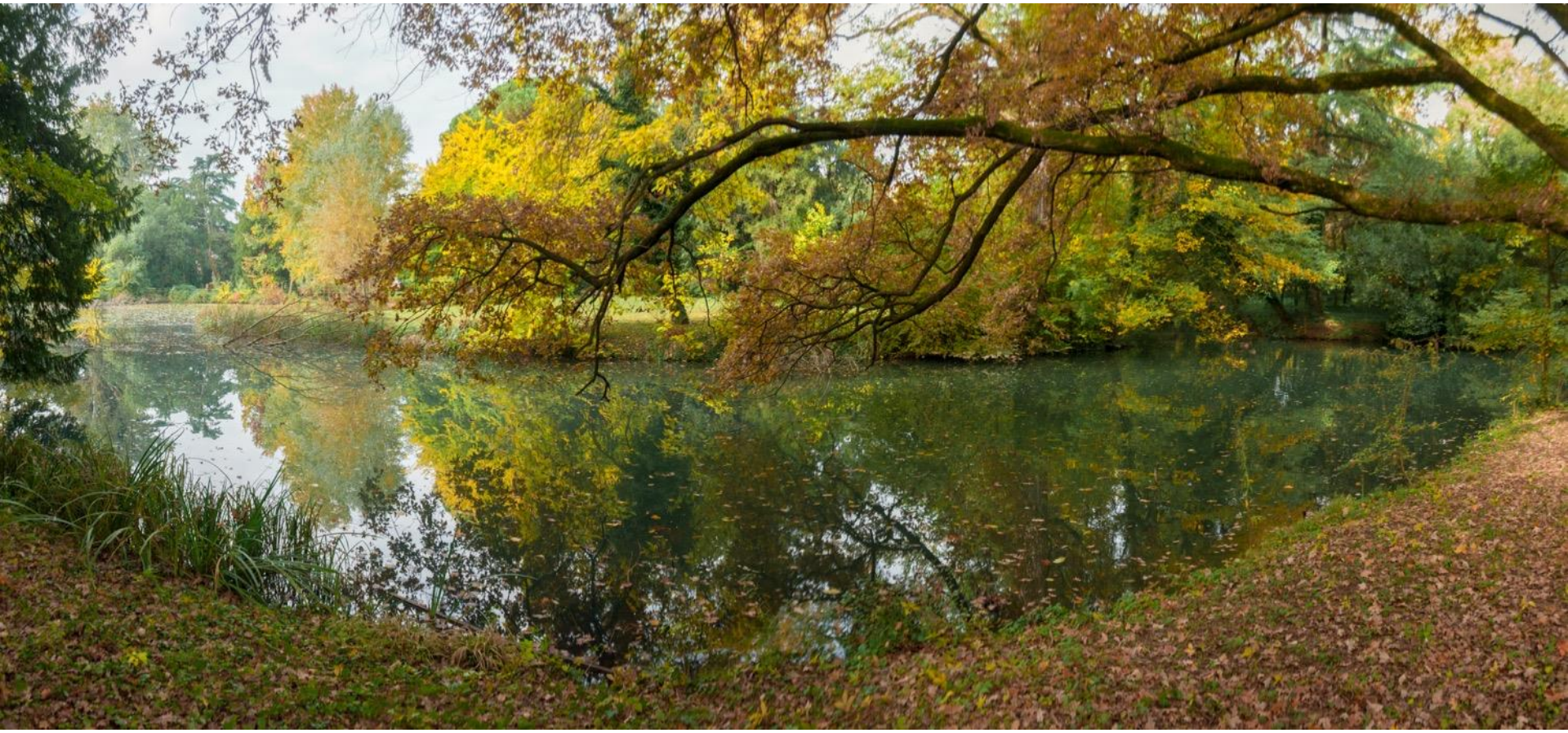
TESAF

DAFNAE

dBC

CIRPAM

CENTRO INTERDIPARTIMENTALE di RICERCA per il RESTAURO, il RECUPERO e la VALORIZZAZIONE dei PARCHI STORICI e degli ALBERI MONUMENTALI



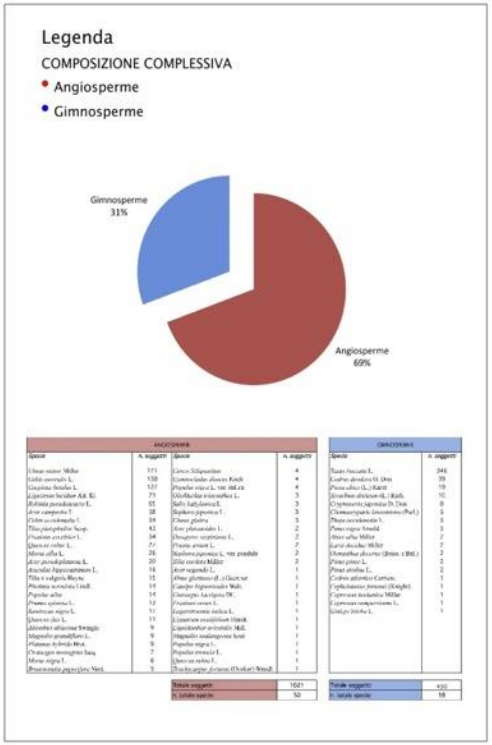
TESAF

DAFNAE

dBC

CIRPAM

CENTRO INTERDIPARTIMENTALE di RICERCA per il RESTAURO, il RECUPERO e la VALORIZZAZIONE dei PARCHI STORICI e degli ALBERI MONUMENTALI



Rilievo, catalogazione e diffusione della conoscenza dei popolamenti arborei storici
Conservazione, gestione e rinnovo dei popolamenti

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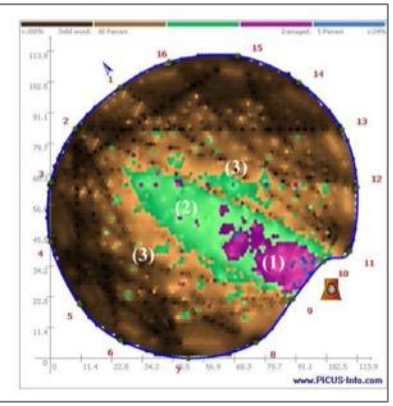

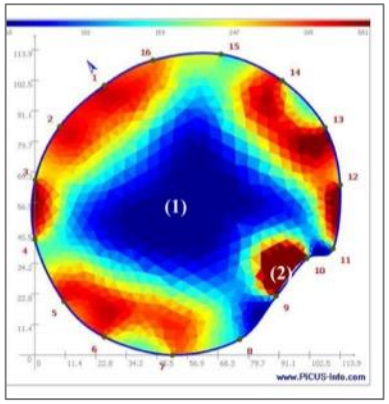

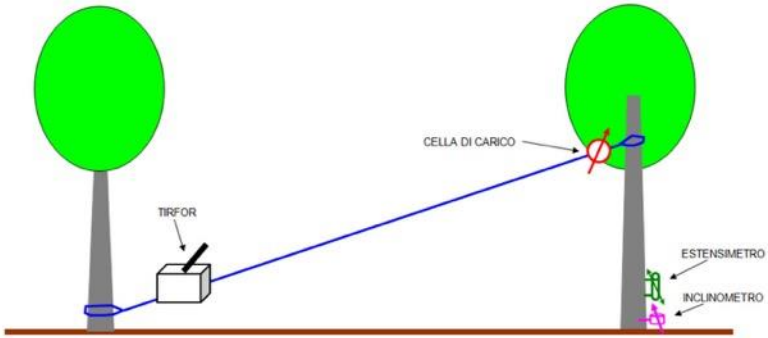

Tutela e cura degli esemplari monumentali

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Grazie per l’attenzione