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- Earth sciences
- Oceanography
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Date Coverage

1984-2014

Update Frequency

Closed as of 1 January 2015

Geographic Coverage

International

Document Types

- Reports
- Books and Monographs
- Conferences, Symposia, Meetings
- Journal Articles
- Theses and Dissertations

Publisher

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TI
AU

Microbial communities may modify how litter quality affects potential decomposition rates as tree species migrate

KEISER, Ashley D. ; KNOEPP, Jennifer D.; BRADFORD, Mark A. . **Plant and soil** 372.1-2 (2013): 167-176.

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AB

Abstract (summary) [Translate](#)

Background and aims Climate change alters regional plant species distributions, creating new combinations of litter species and soil communities. Biogeographic patterns in microbial communities relate to dissimilarity in microbial community function, meaning novel litters to communities may decompose differently than predicted from their chemical composition. Therefore, the effect of a litter species in the biogeochemical cycle of its current environment may not predict patterns after migration. Under a tree migration sequence we test whether litter quality alone drives litter decomposition, or whether soil communities modify quality effects. Methods Litter and soils were sampled across an elevation gradient of different overstory species where lower elevation species are predicted to migrate upslope. We use a common garden, laboratory microcosm design (soil community x litter environment) with single and mixed-species litters. Results We find significant litter quality and microbial community effects ($P < 0.001$), explaining 47 % of the variation in decomposition for mixed-litters. Conclusion Soil community effects are driven by the functional breadth, or historical exposure, of the microbial communities, resulting in lower decomposition of litters inoculated with upslope communities. The litter x soil community interaction suggests that litter decomposition rates in forests of changing tree species composition will be a product of both litter quality and the recipient soil community.

SU

Indexing (details) Cite

Subject

Agronomy, agriculture, phytopathology;
Agronomie, agriculture, phytopathologie;
Plant biology and physiology;
Biologie et physiologie vegetales;
Ecology;
Ecologie;
Soil science, pedology;
Science du sol, pedologie;
Plante ligneuse;
Woody plant;
Planta leñosa;
Carbone;
Carbon;
Carbono;
Arbre;
Tree;
Arbol;
Relation sol plante;
Soil plant relation;
Relación suelo planta;
Gradient;
Gradiente;
Environnement;
Environment;
Medio ambiente;
Minéralisation;
Mineralization;
Mineralización;
Décomposition;
Decomposition;
Descomposición;
Potential;
Potential;
Potencial;
Litière;
Litter;
Hojarasca;
Communauté microbienne;
Microbial community;
Comunidad microbiana

CC	Classification	002A32C02B: Soil-plant relationships. Soil fertility 002A14: ANIMAL, PLANT AND MICROBIAL ECOLOGY 002A32C02B: Relations sol-plante. Fertilité des sols 002A14: ECOLOGIE ANIMALE, VEGETALE ET MICROBIENNE
IF	Identifier (keyword)	Litter decomposition, Carbon mineralization, Microbial community function, Functional breadth, Environmental gradient
TI	Title	Microbial communities may modify how litter quality affects potential decomposition rates as tree species migrate
AU	Author	KEISER, Ashley D. ¹ ; KNOEPP, Jennifer D. ² ; BRADFORD, Mark A. ¹
AF		¹ School of Forestry and Environmental Studies, Yale University, 370 Prospect Street, New Haven, CT 06511, United States ² USDA Forest Service Southern Research Station, Coweeta Hydrologic Laboratory, 3160 Coweeta Lab Rd., Otto, NC 28763, United States
LA	Language	English
SL	Language of abstract	eng
DTYPE	Document type	article
PUB	Publication title	Plant and soil
VO	Volume	372
ISS	Issue	1-2
PG	Pagination	167-176
PCT	Page count	10
ISSN	ISSN	0032-079X
CODEN	CODEN	PLSOA2
PT,PSTYPE	Publication type	Scholarly Journals
PB	Publisher	Springer
PBLOC	Publisher location	Dordrecht, Netherlands
URL	URL	http://cat.inist.fr/?aModele=afficheN&cpsidt=27914978
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PD,YR	Publication date	2013
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AN	Source attribution	PASCAL, © Publisher specific
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	Copyright	Copyright 2013 INIST-CNRS. All rights reserved.
FAV	First available	2013-12-20
UD	Updates	2013-12-20
	Database	PASCAL (1984 - current)

SEARCH FIELDS

Field Name	Field Code	Example	Description and Notes
Abstract	AB	ab("climate change")	Use adjacency and/or Boolean operators to narrow search results.
Abstract present	ABANY	pcc(001e01*) AND abany(yes)	Add: <i>AND ABANY(YES)</i> to a query to limit retrieval to records with abstracts.
Accession number	AN	an(27914978)	A unique document identification number assigned by the information provider.
All fields	ALL	all("microbial communities")	Searches all fields in bibliographic files. Use adjacency and/or Boolean operators to narrow search results.
All fields + text	--	"microbial communities"	Same as ALL field code: searches all fields in bibliographic files.
Author	AU	au(keiser,ashley) au(bradford mark a)	Includes all authors. Also searchable via the Look Up Citation feature.
Author Affiliation	AF	af("usda forest service")	Includes as much data as is available in the original document, such as department, organization, address, city, state, country, author email, etc.
Classification	CC	cc("002a32c02b")	Truncate for broader retrieval. Also searchable using PCC field code.

Field Name	Field Code	Example	Description and Notes
PASCAL classification ¹	PCC	pcc(002a3*)	Truncate for broader retrieval. Also searchable using CC field code.
Conference information	CF	cf(mechanical behavior of nanostructured materials)	Also searches conference title, location, country, start date, and number/type.
Conference title	CFTI	cfti("neural networks ")	Also searchable with CF.
Conference location	CG	cg(torremolinos)	
Conference country	CCNT	ccnt(spain)	Also searchable with CF.
Conference start date	ESDT, CDT	esdt(2011-06-08)	Also searchable with CF.
Corporate author	CA	ca(exxon)	
Country of publication	CP	cp(netherlands)	
Document title	TI	ti(microbial communities PRE/4 litter quality)	Includes alternate title and subtitle, but not Publication Title (PUB).
Title only	TIO	tio(microbial communities PRE/4 litter quality)	Searches only the Title, not subtitle or alternate title.
Alternate title	OTI	oti(gatto AND cane)	Includes Alternate Title, Subtitle, and Original language of document title, if available. Field code TI also searches the Alternate title.
Document type	DTYPE	dtype(article)	
First author	FAU	fau(keiser)	First name listed in Author field. It is included in Author browse, but its position cannot be specified in the Author browse.
First available	FAV	fav(2013-12-20)	Indicates the first time a document was loaded in a specific database on PQD. It will not change however many times the record is subsequently reloaded, as long as the Legacy ID does not change.
From database ²	FDB	su("chemical looping combustion") AND fdb(PASCAL) su("chemical looping combustion") AND fdb(10000137)	Useful in multi-file searches to isolate records from a single file.* FDB cannot be searched on its own; specify at least one search term then AND it with FDB.
Identifier (keyword)	IF	if("litter decomposition")	
ISSN	ISSN	issn(0032-079X) issn(0032079X)	
Issue	ISS	iss(1-2)	
Language	LA	la(english)	The language in which the document was originally published.
Language of abstract	SL	sl(eng)	
Number of references	NR	nr(1)	
Pagination	PG	pg(167)	
Publication date	PD	pd(2013) pd(2011-2013)	Date range searching is supported.
Publication title ¹	PUB	pub("plant and soil")	
Publication type	PT, PSTYPE	pt(scholarly journals)	Also searchable using PSTYPE
Publication year	YR	yr(2013) yr(2011-2014)	Date range searching is supported.
Publisher	PB	pb(springer)	
Publisher location	PBLOC	pbloc(amsterdam)	
Subject ¹	SU	su(woody plant) su.exact("microbial community")	
Subject area ¹	SBA	sba(mathematics) sba.x("computer science")	
Updates	UD	ud(2013-12-20)	The date(s) the record was loaded as a result of an update

Field Name	Field Code	Example	Description and Notes
			provided by the supplier.
Volume of publication	VO	vo(372)	Also searchable via the Look Up Citation tool.

¹ A Lookup/Browse feature is available for this field in the Advanced Search dropdown or in Browse Fields.

² Click the “Field codes” hyperlink at the top right of the Advanced Search page. Click “Search syntax and field codes”, then click on “FDB command” to get a list of database names and codes that can be searched with FDB.

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Abstract included

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Document type, Language

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Subject, Author, PASCAL classifications, Subject area

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