Efectos del fuego en potreros de monte. Evidencias y perspectivas utilizando información provista por sensores remotos montados sobre plataformas satelitales

Dr. Carlos M. Di Bella
INTA-CONICET-FAUBA

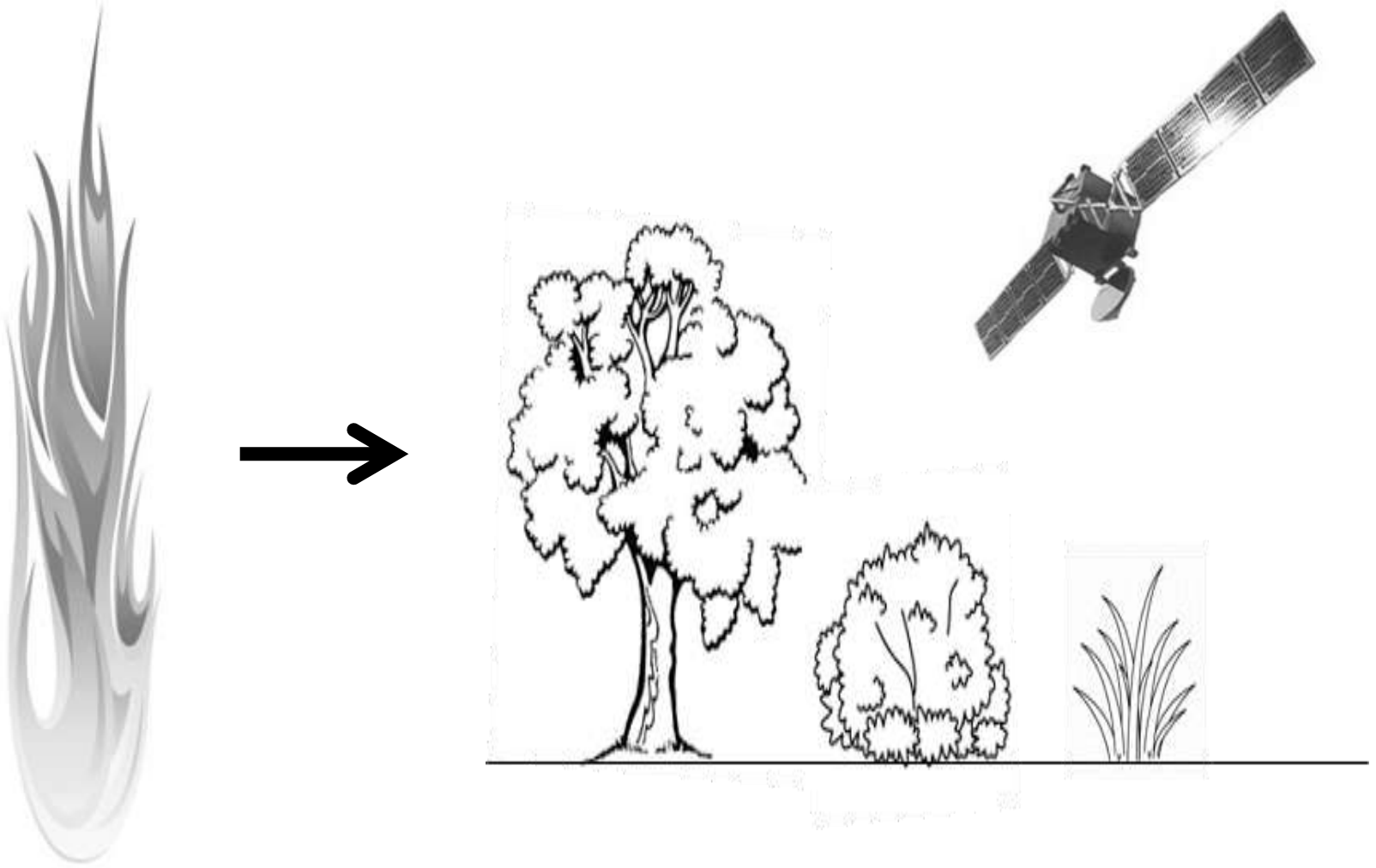
Ministerio de Agricultura, Ganadería y Pesca
Presidencia de la Nación

INTA

Introducción

Introducción

Esquema de la presentación



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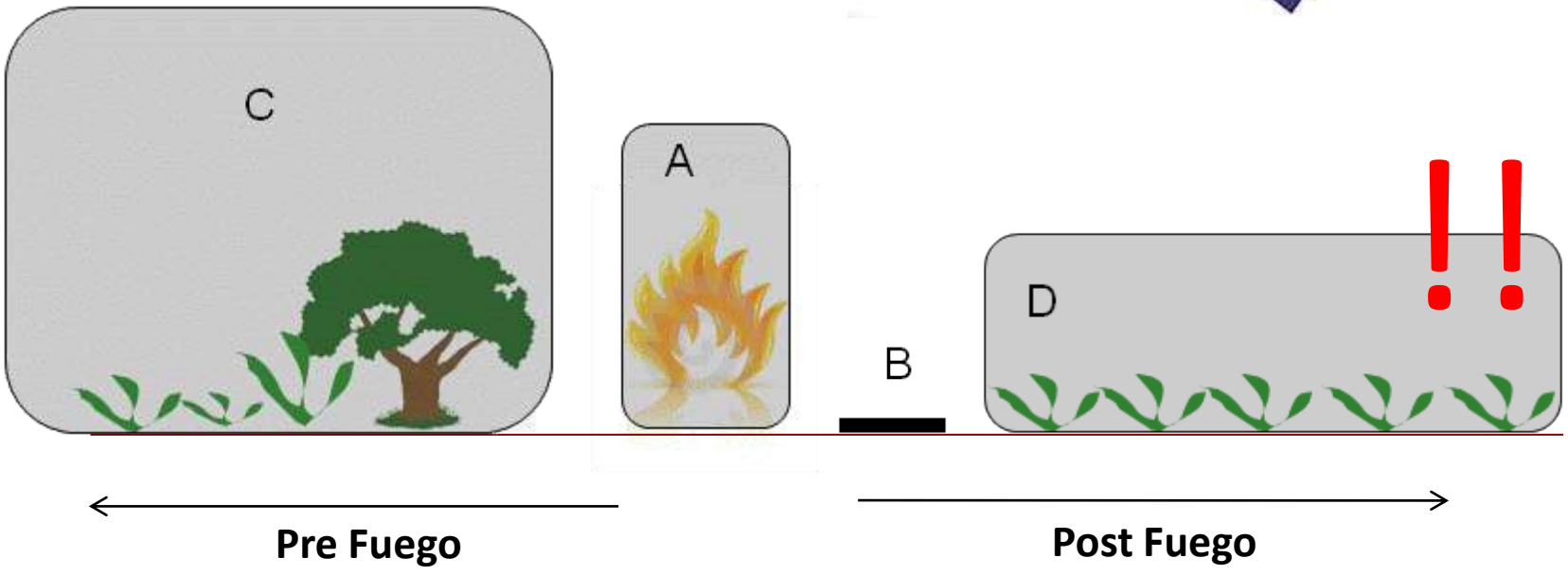

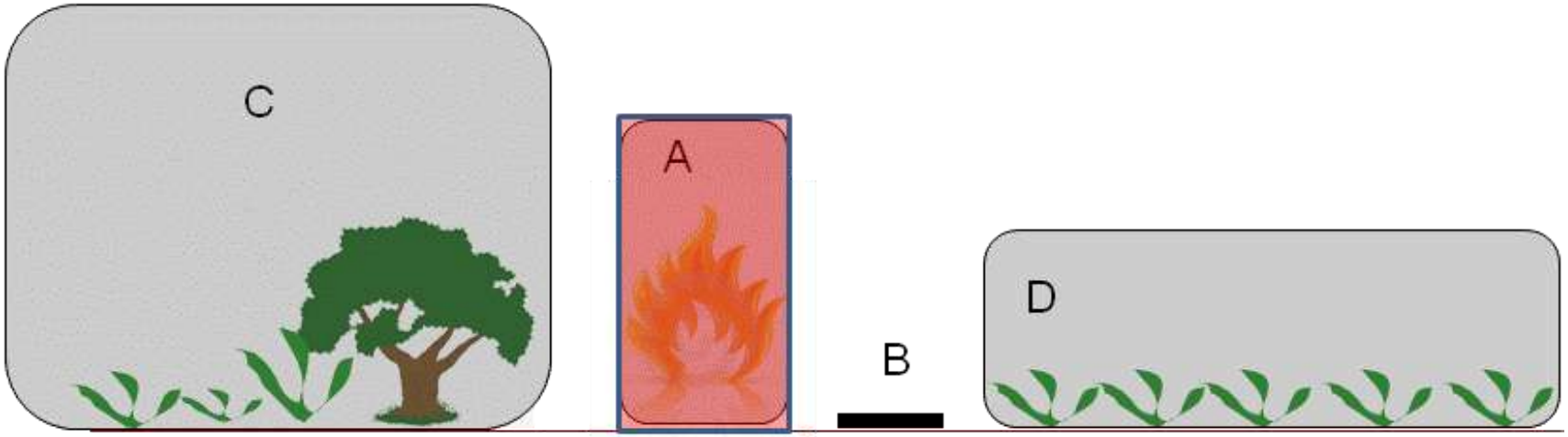
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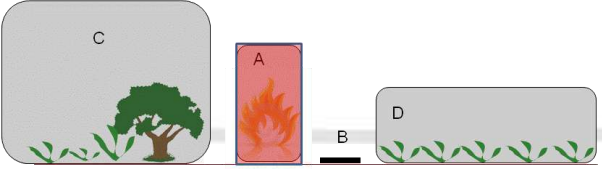
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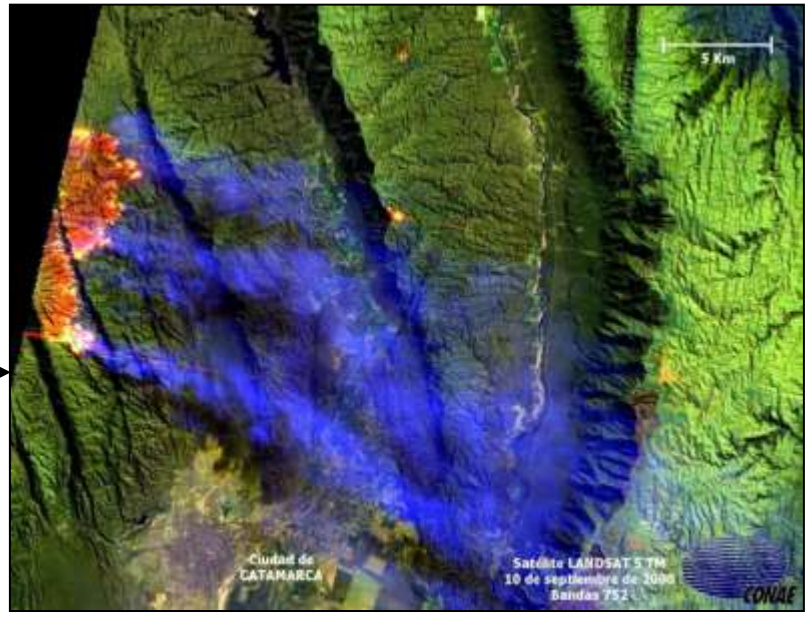
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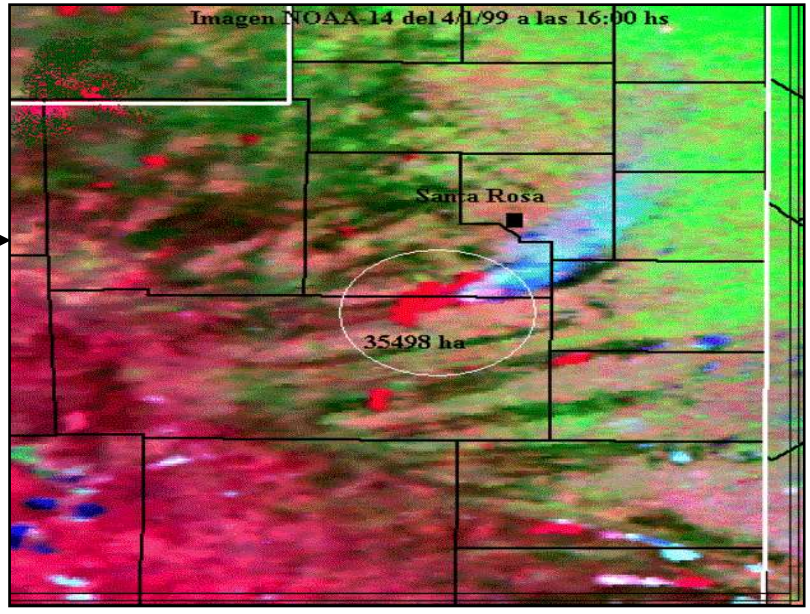
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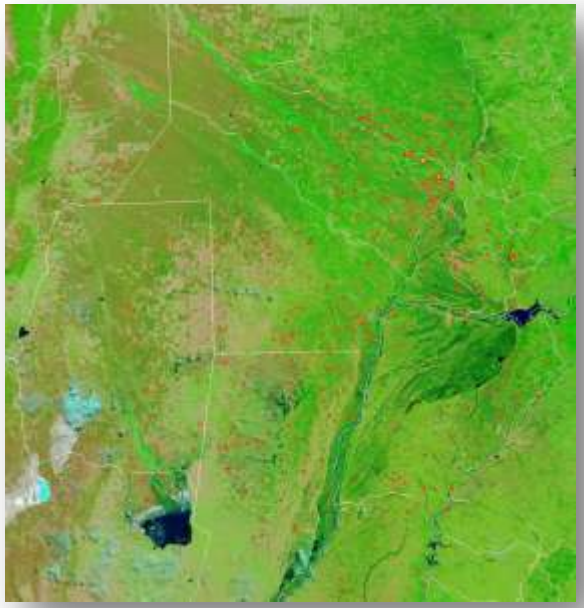
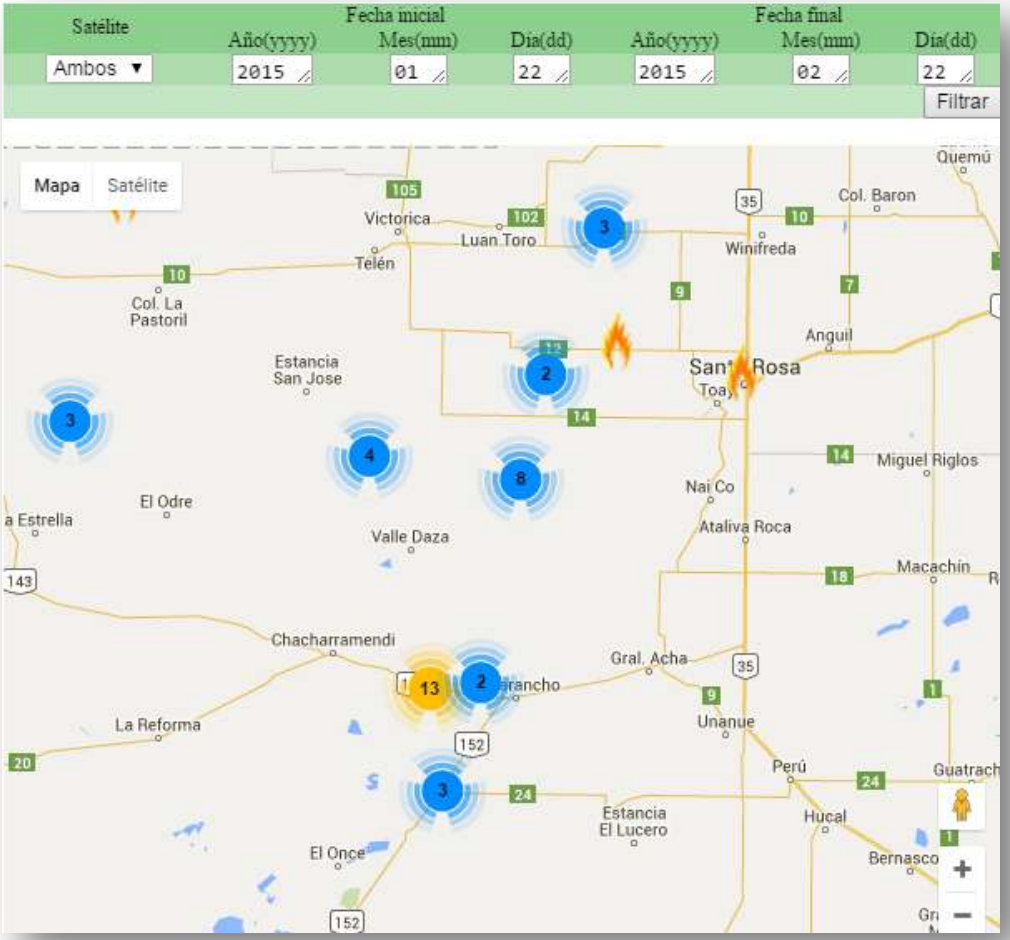


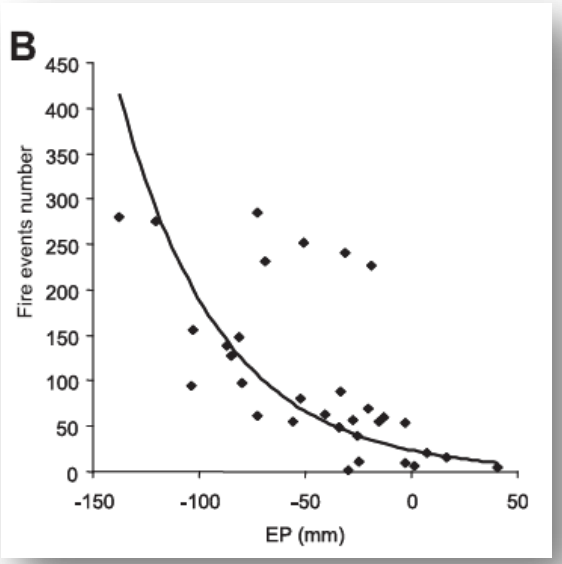


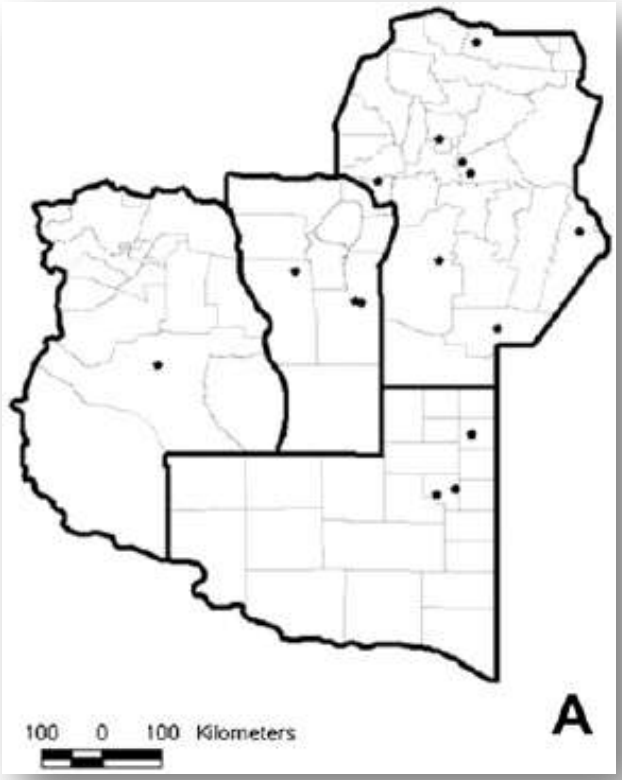
Latitud	Longitud	Cobertura terrestre/Uso de suelo. GlobCover,2008	División Administrativa	Área Natural Protegida	Total Radiative Power (Megawatts)	Satélite	Hora
-11.77108	-59.0517	Mosaic cropland (50-70%) / vegetation (grassland/shrubland/forest) (20-50%)	Brazil, Mato Grosso, Juína	No afecta	18.29262	terra	1433
-12.03638	-57.29374	Closed to open (>15%) (broadleaved or needle-leaved, evergreen or deciduous) shrubland (<5m)	Brazil, Mato Grosso, Nova Maringá	No afecta	33.08063	terra	1433
-12.08894	-57.22538		Brazil, Mato Grosso, Nova Maringá	No afecta	31.72308	terra	1433

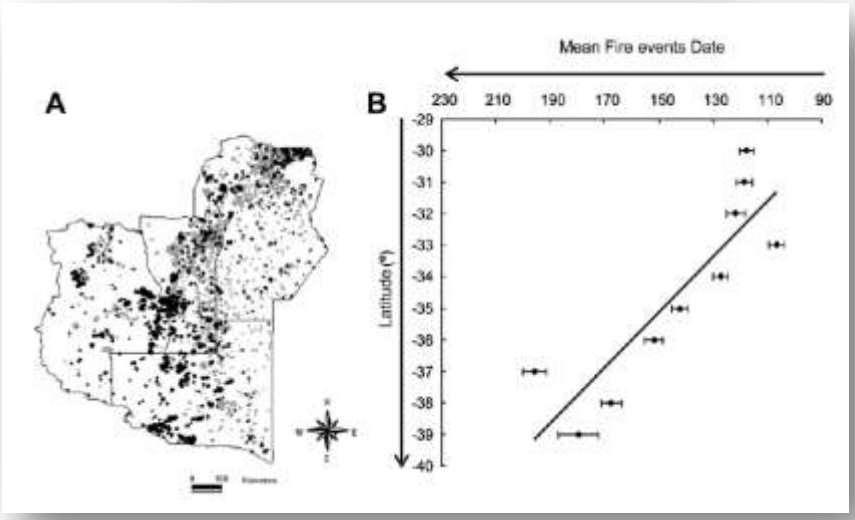
Journal of Arid Environments 78 (2012) 161–168

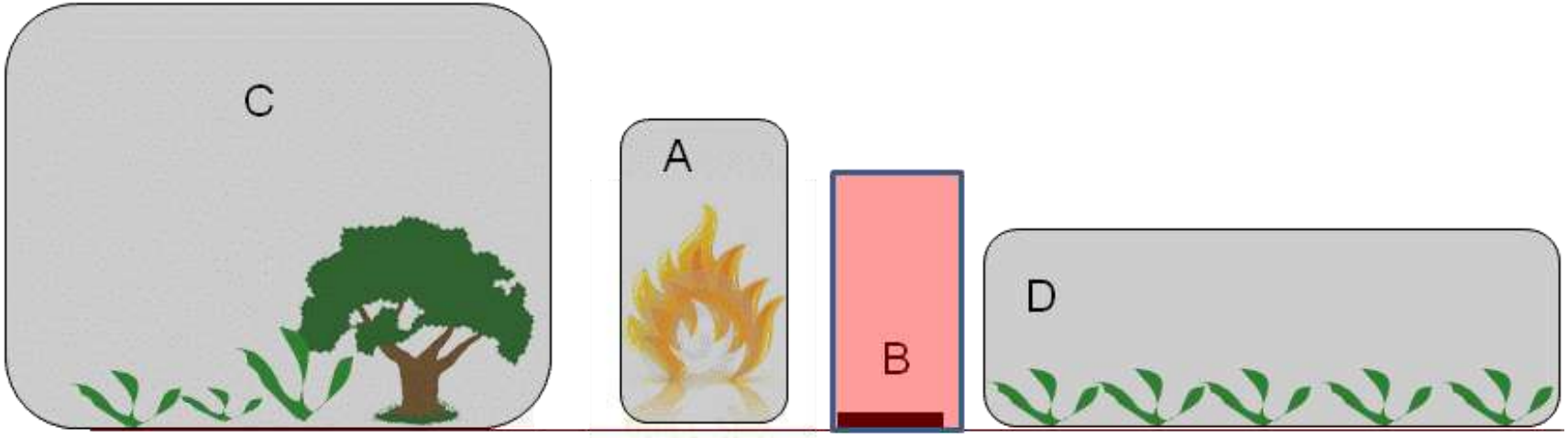
Fire patterns in central semiarid Argentina

M.A. Fischer [a,*], C.M. Di Bella [a,b], E.G. Jobbágy [b,c]





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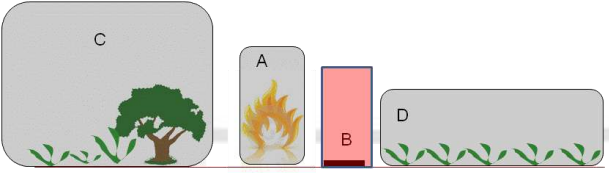
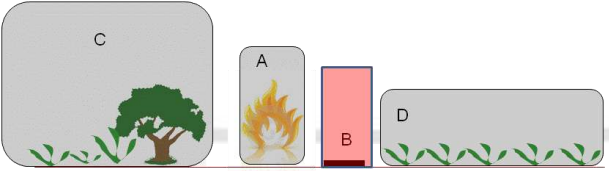


Fig. 1. Low, moderate, and high 'burn severity' sites in California (CA) chaparral, Montana (MT) mixed-conifer forests, and Alaska (AK) black spruce forests. Burn severity was classified via consistent visual assessment of ground and canopy fire effects.



Remote Sensing of Environment

Characterization of post-fire surface cover, soils, and burn severity at the Cerro Grande Fire, New Mexico, using hyperspectral and multispectral remote sensing

Raymond F. Kokaly, Barnaby W. Rockwell, Sandra L. Haire, Trude V.V. King

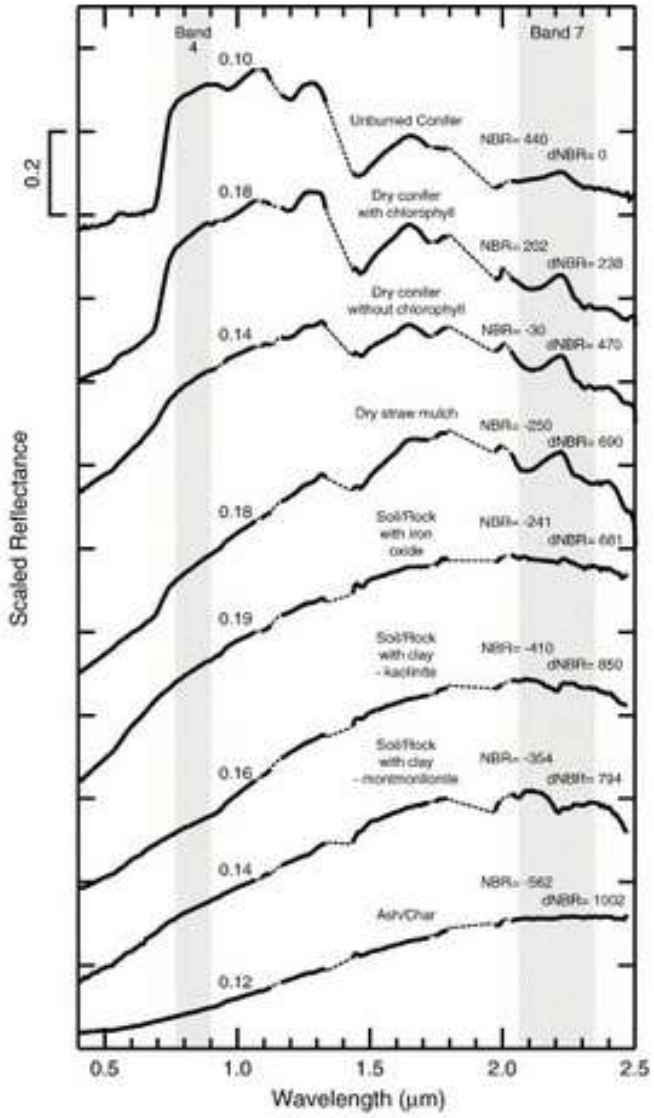


Fig. 3.

AVIRIS spectra for areas of different surface cover. For clarity and detail the spectra are offset and scaled by the following factors

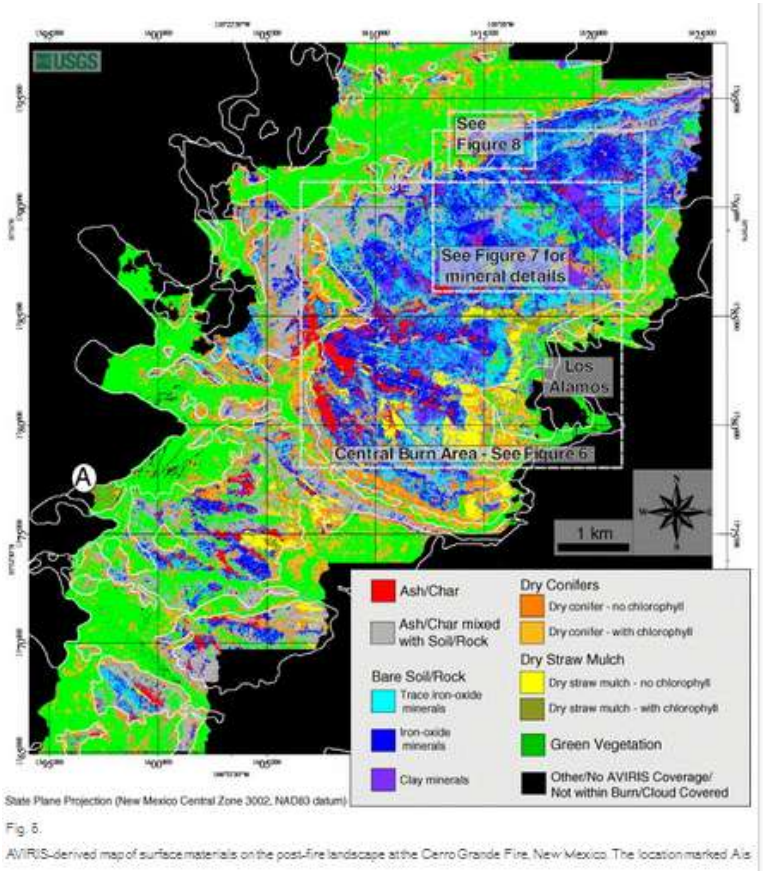
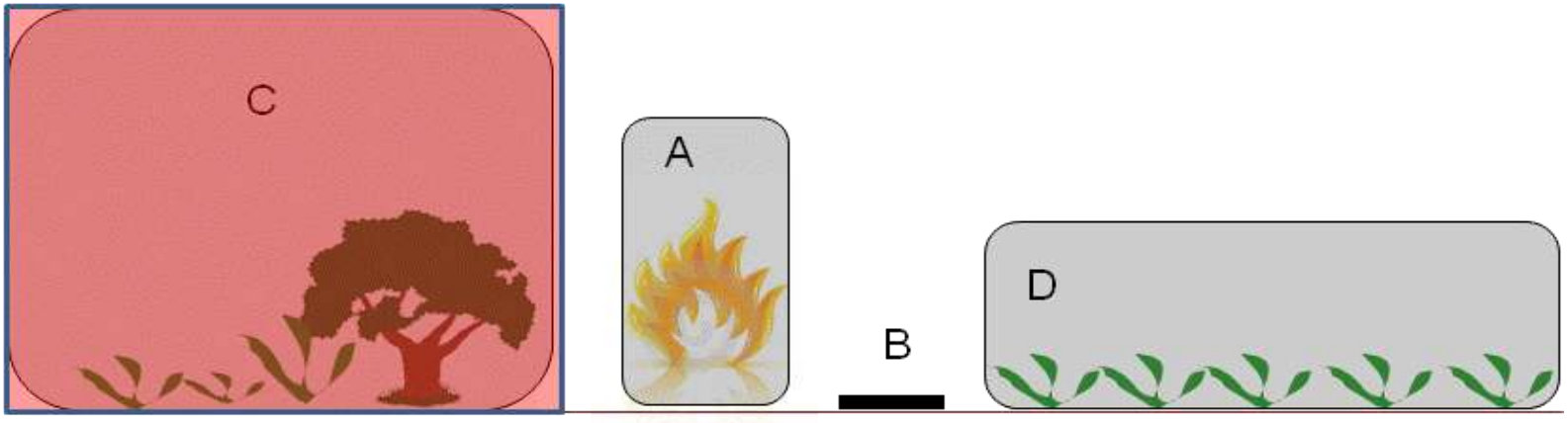


Fig. 6.

AVIRIS-derived map of surface materials on the post-fire landscape at the Cerro Grande Fire, New Mexico. The location marked A is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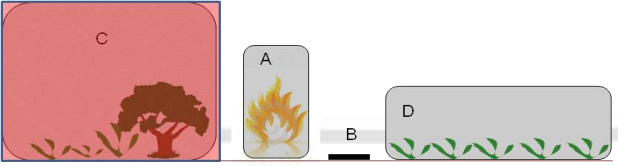
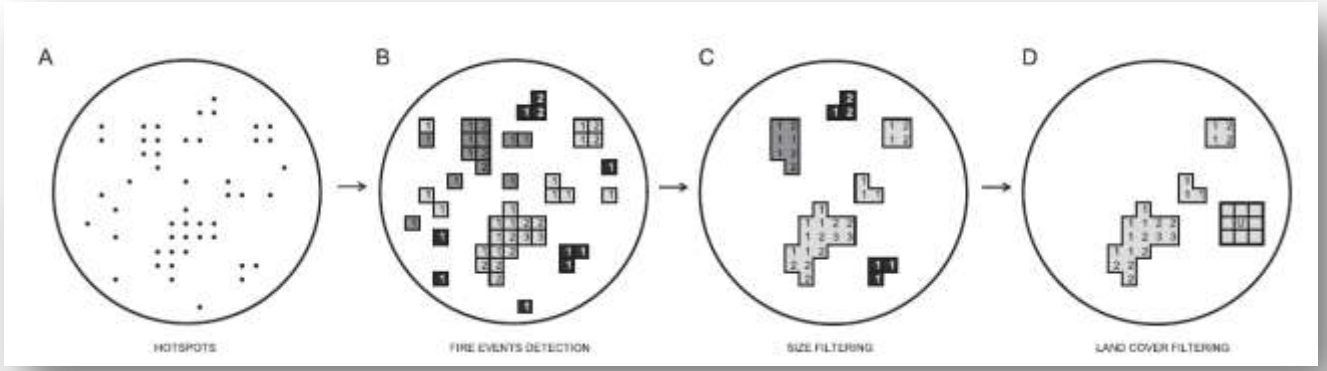
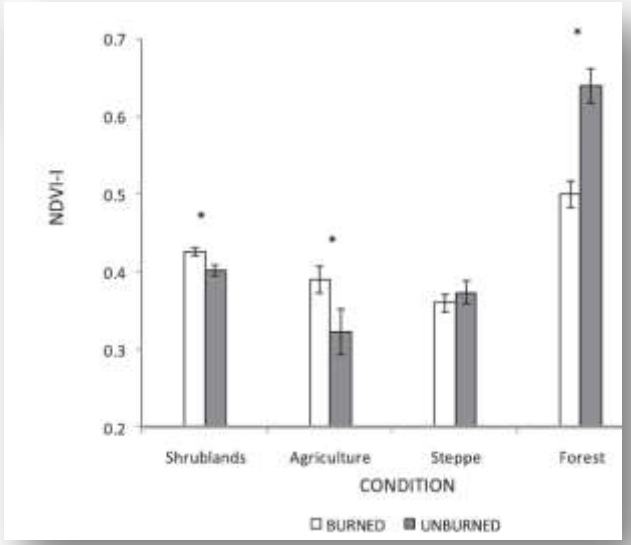


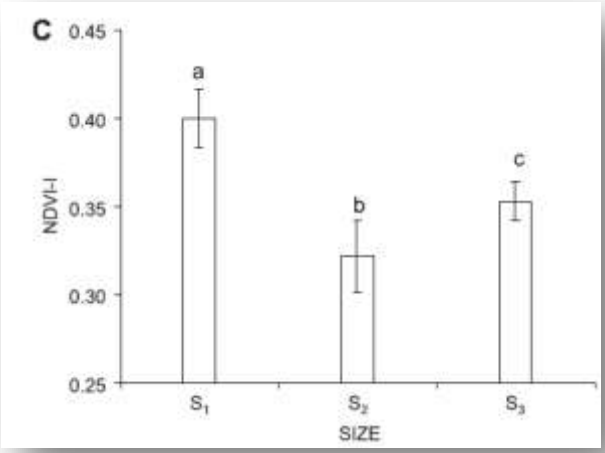
Journal of Arid Environments 120 (2015) 63–71

Influence of fuel conditions on the occurrence, propagation and duration of wildland fires: A regional approach

M.A. Fischer [a, *], C.M. Di Bella [a, b], E.G. Jobbágy [b, c]



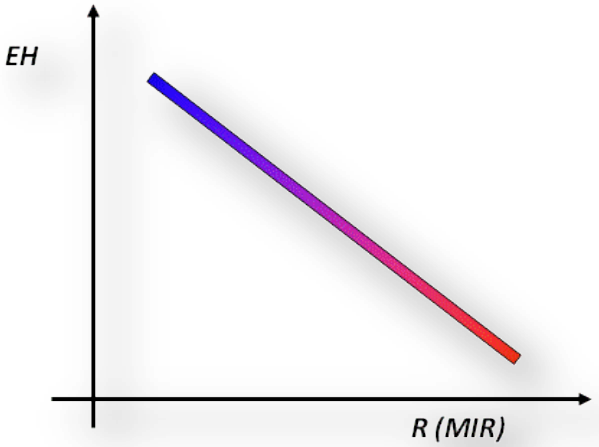




Serie Geográfica, 16 (2010), 51 - 59 ISSN: 1136 - 5277

INVERSIÓN DE MODELOS DE SIMULACIÓN DE LA REFLECTIVIDAD PARA LA ESTIMACIÓN DEL ESTADO HÍDRICO DEL COMBUSTIBLE VIVO EN MATORRALES Y PASTIZALES DE LA ARGENTINA

M. Yebra (*); M.E. Beget (**); P. Oricchio (**) y C. Di Bella (**)



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SCIENCE DIRECT
Remote Sensing of Environment 92 (2004) 309–321
Remote Sensing of Environment
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Estimating live fuel moisture content from remotely sensed reflectance

F.M. Danson*, P. Bowyer

Telford Institute of Environmental Systems, School of Environment and Life Sciences, University of Salford, Manchester M5 4WT, UK

Received 15 July 2003; received in revised form 23 March 2004; accepted 30 March 2004

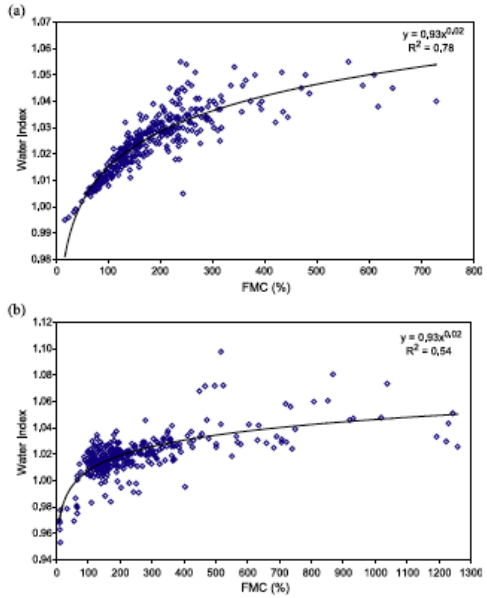
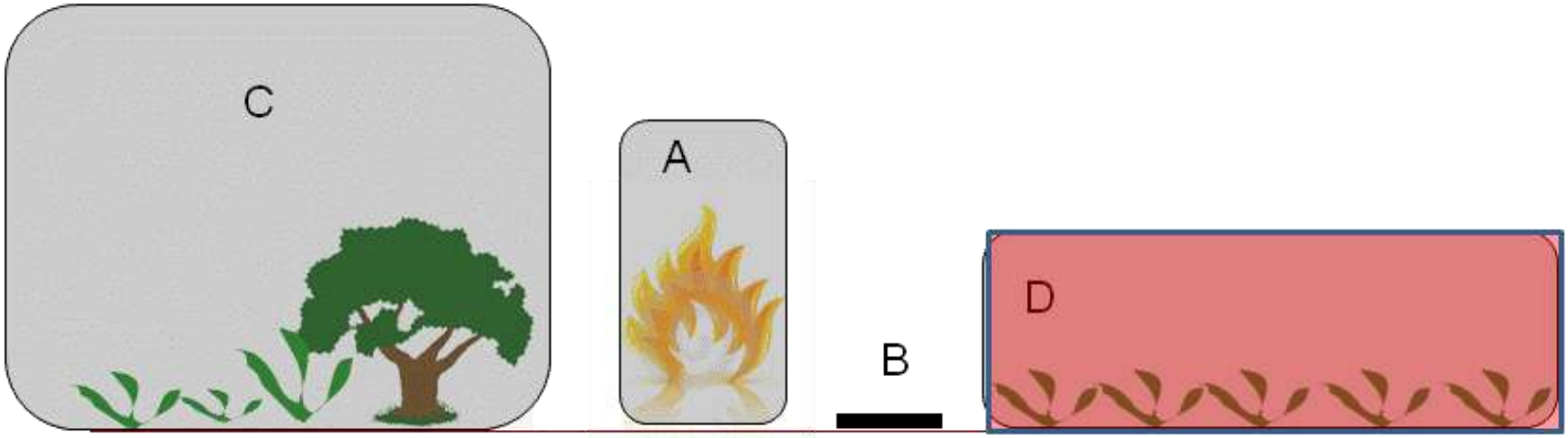


Fig. 2. (a) Relationship between the water index and fuel moisture content (FMC), Prospect-simulated reflectance, and Gaussian parameter distribution. (b) Relationship between the water index and FMC, LOPEX-measured data.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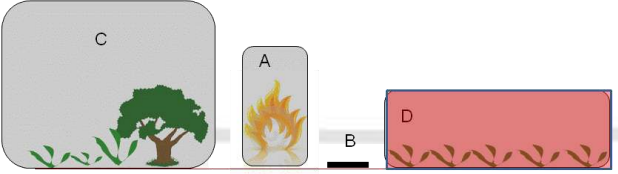
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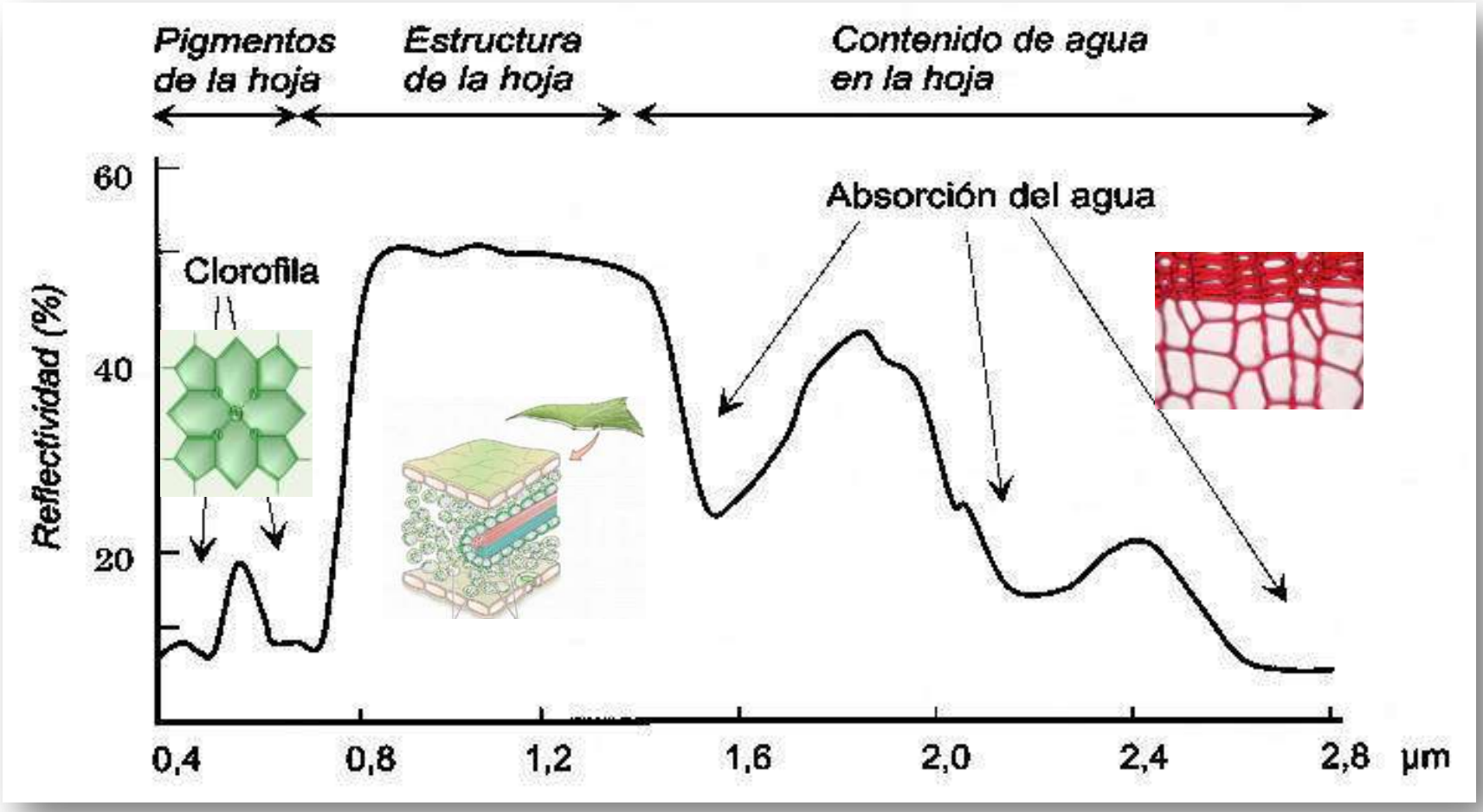
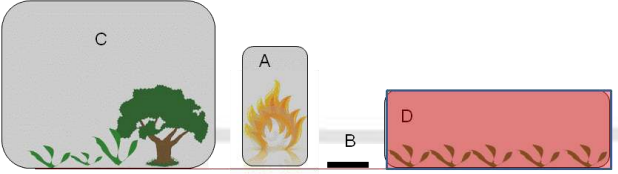

Pigmentos de la hoja
Estructura de la hoja
Contenido de agua en la hoja
Absorción del agua
Clorofila
Reflectividad (%)
60
40
20
0,4
0,8
1,2
1,6
2,0
2,4
2,8
µm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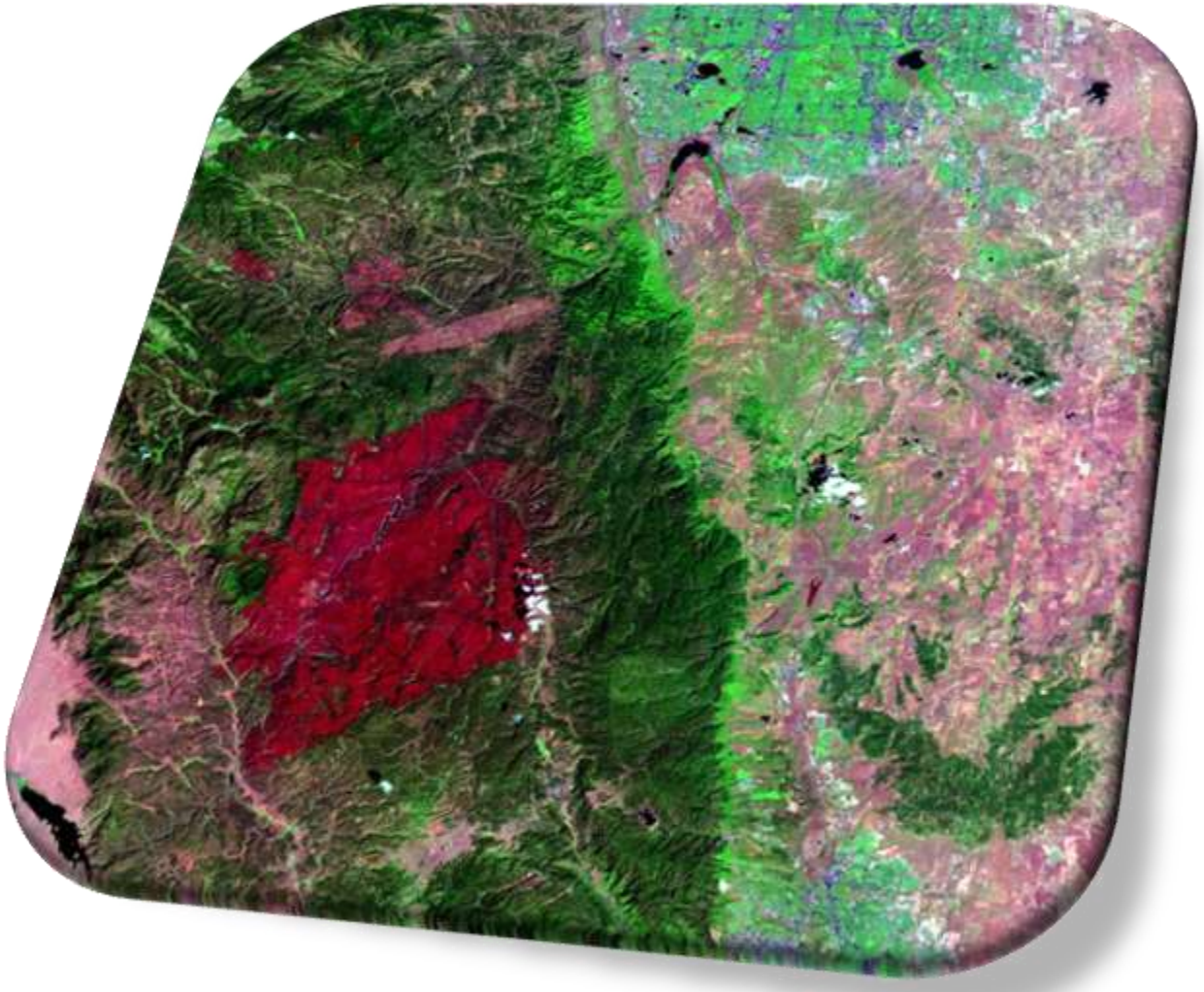

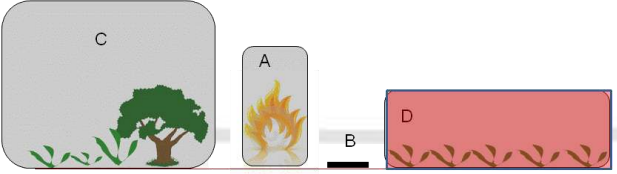
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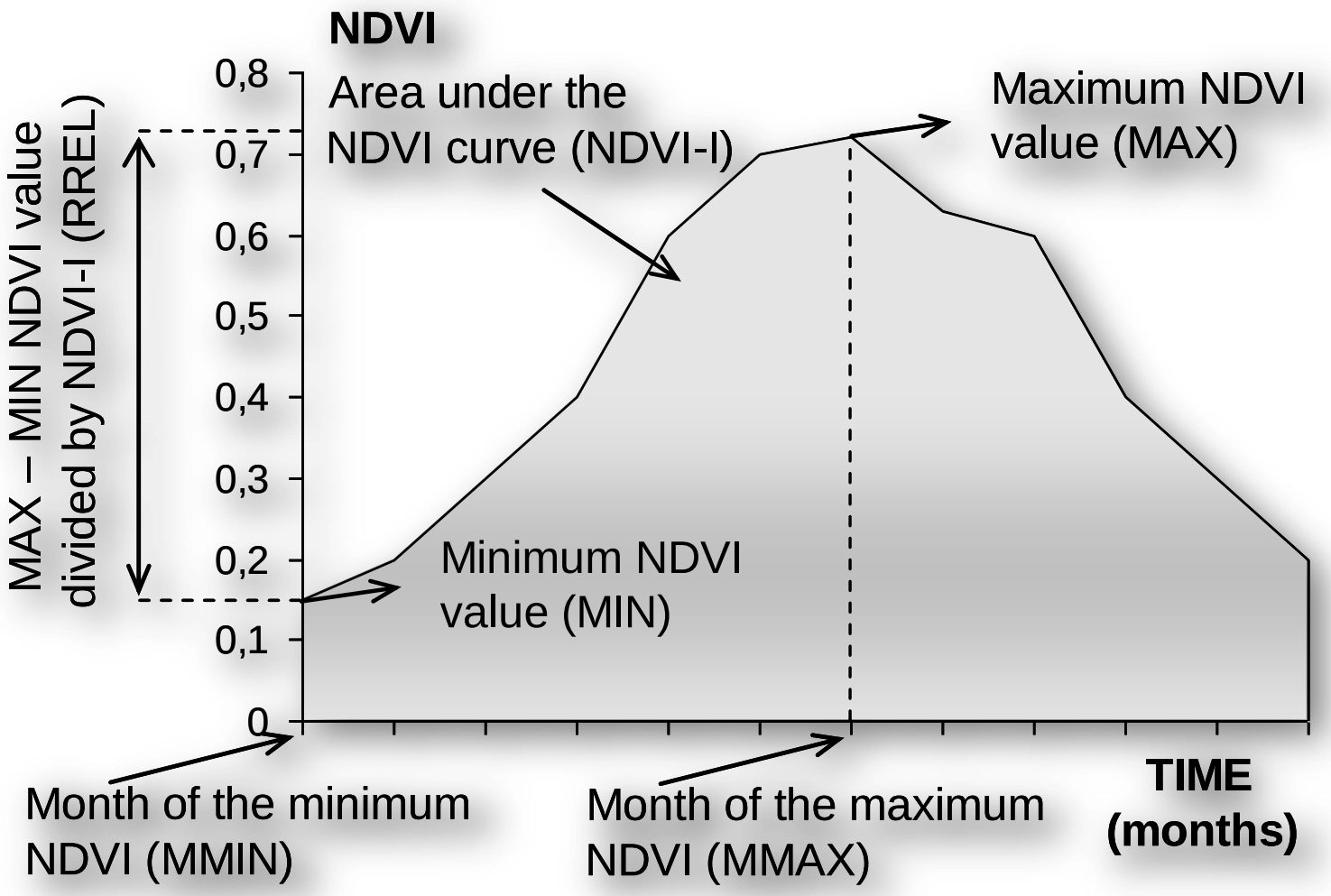
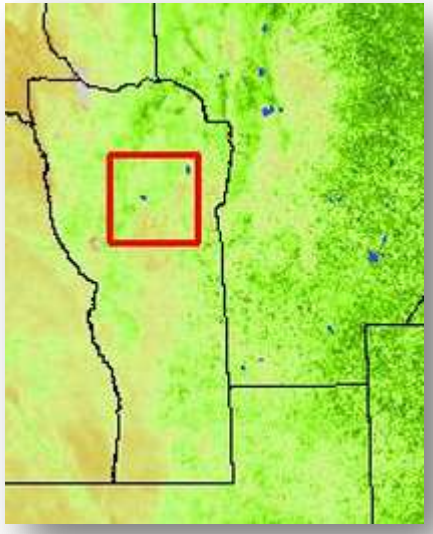
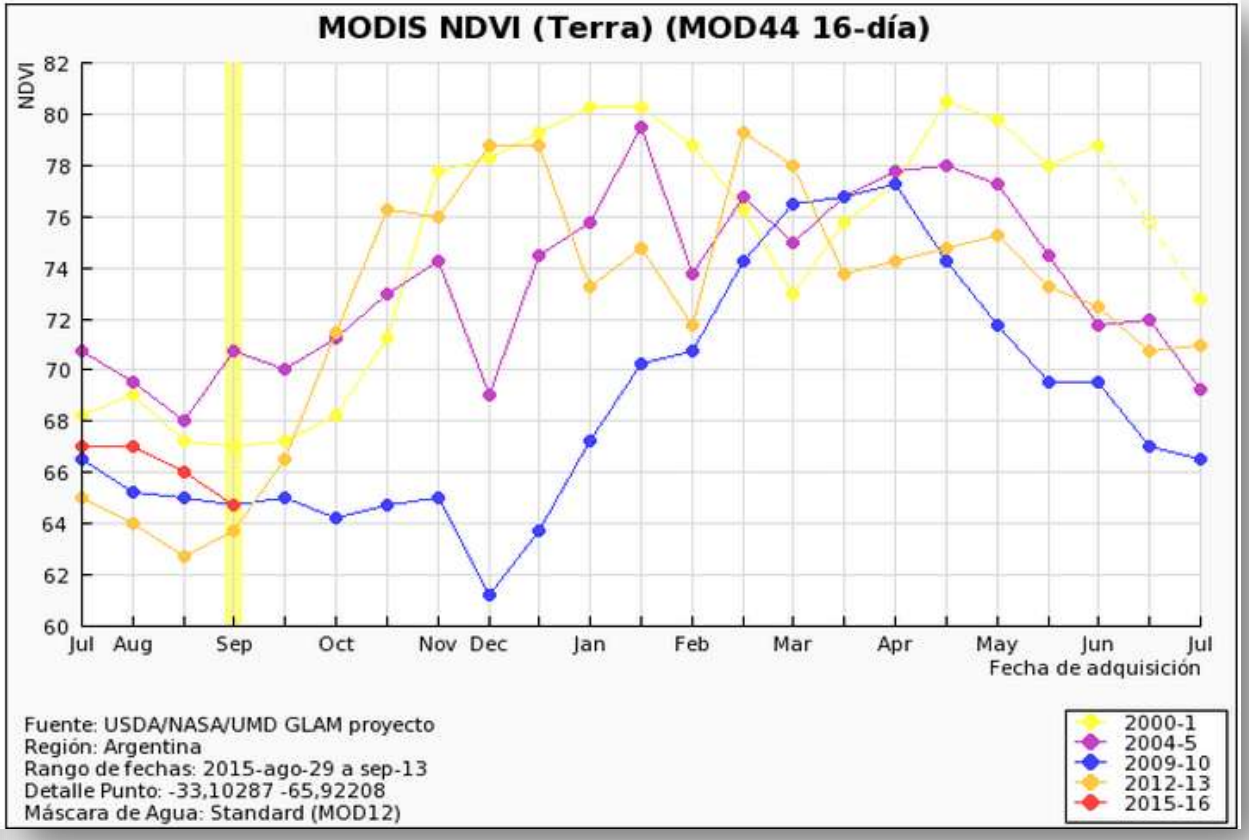
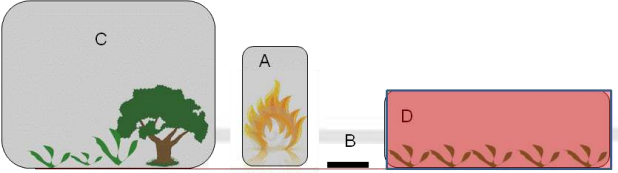

NDVI
0,8
0,7
0,6
0,5
0,4
0,3
0,2
0,1
0
MAX – MIN NDVI value
divided by NDVI-I (RREL)
Area under the
NDVI curve (NDVI-I)
Maximum NDVI
value (MAX)
Minimum NDVI
value (MIN)
Month of the minimum
NDVI (MMIN)
Month of the maximum
NDVI (MMAX)
TIME
(months)

Seguimiento Global de la Agricultura -- Base de Datos Temporal MODIS/NDVI a 250 metros
Argentina -- 2015-ago-29 a sep-13

Lenguaje
Español







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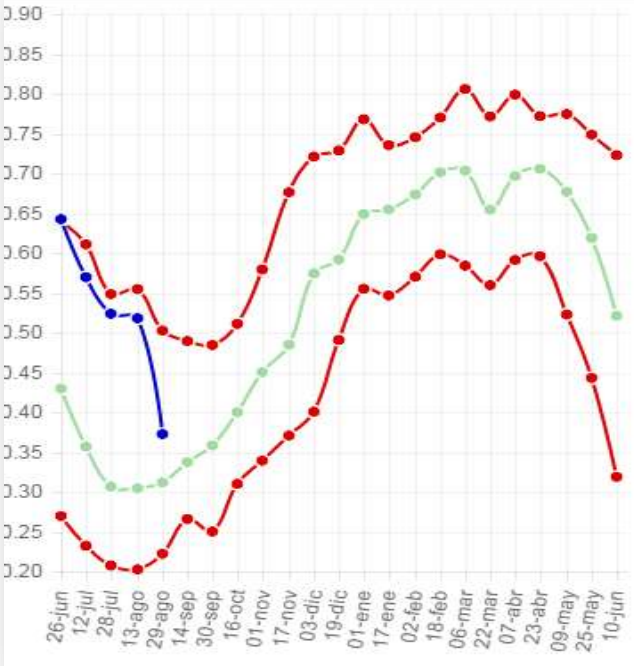

Suelos

max	Hapludoles(75.00000%)Hapludoles(25.00000%)(null)(0.00000%)
min	Alcalinidad:No sodico Anegabilidad:-
med	Drenaje:Bien drenadoErosion_E:-
actual	Erosion_H:Ligera Limit_Ppal:Suscep eros hidrica
	Prof_S1:100 Text_S1:Franca
	Text_BS1:Franca Ind_Prod:80.00000

Septiembre 2015

Seguimiento Piloto de Sistemas Forrajeros

Fecha informe: 21/09/15
Fecha adquisición de imágenes: 13/09/2015

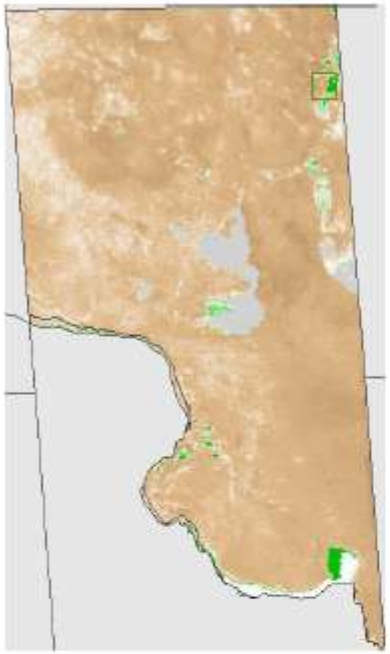

Imagen diferencial (Actual - Max)

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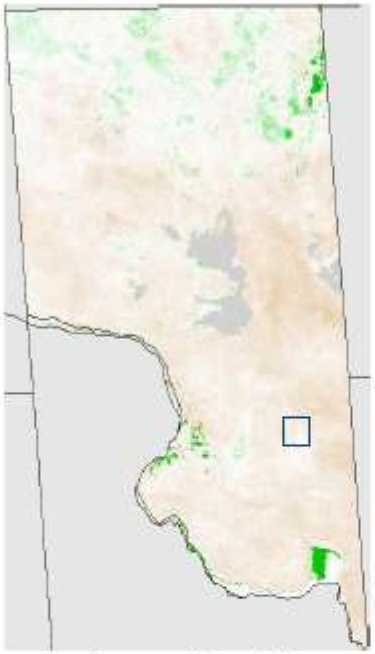
Mayor que el máximo

Menor que el máximo

Igual al máximo



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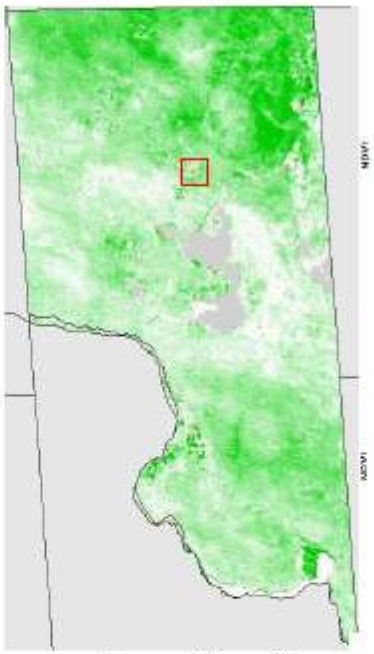

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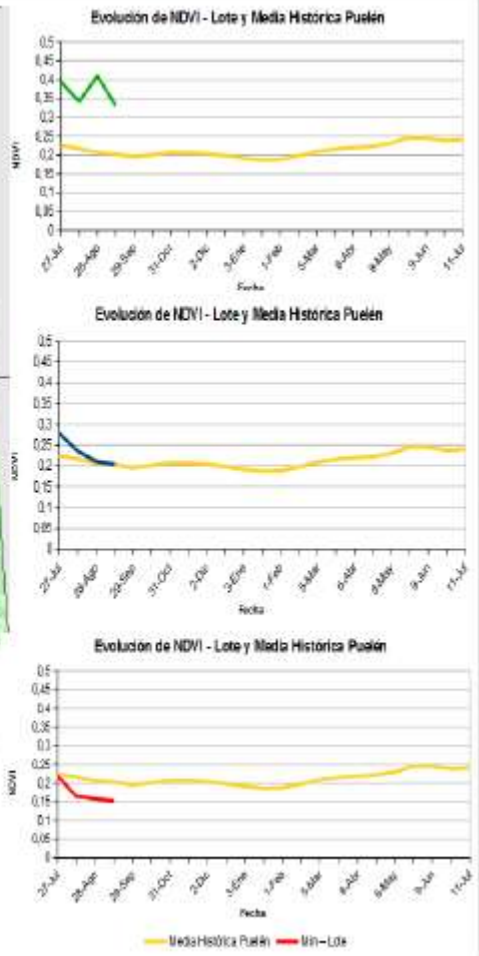

C A B D

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Journal of Geographic Information System, 2012, 4, 383-391
doi:10.4236/jgis.2012.44044 Published Online August 2012 (http://www.SciRP.org/journal/jgis)

Scientific Research

Multi-Temporal Analysis of Remotely Sensed Information Using Wavelets

Alfredo Nicolás Campos[1,2], Carlos Marcelo Di Bella[1,3]

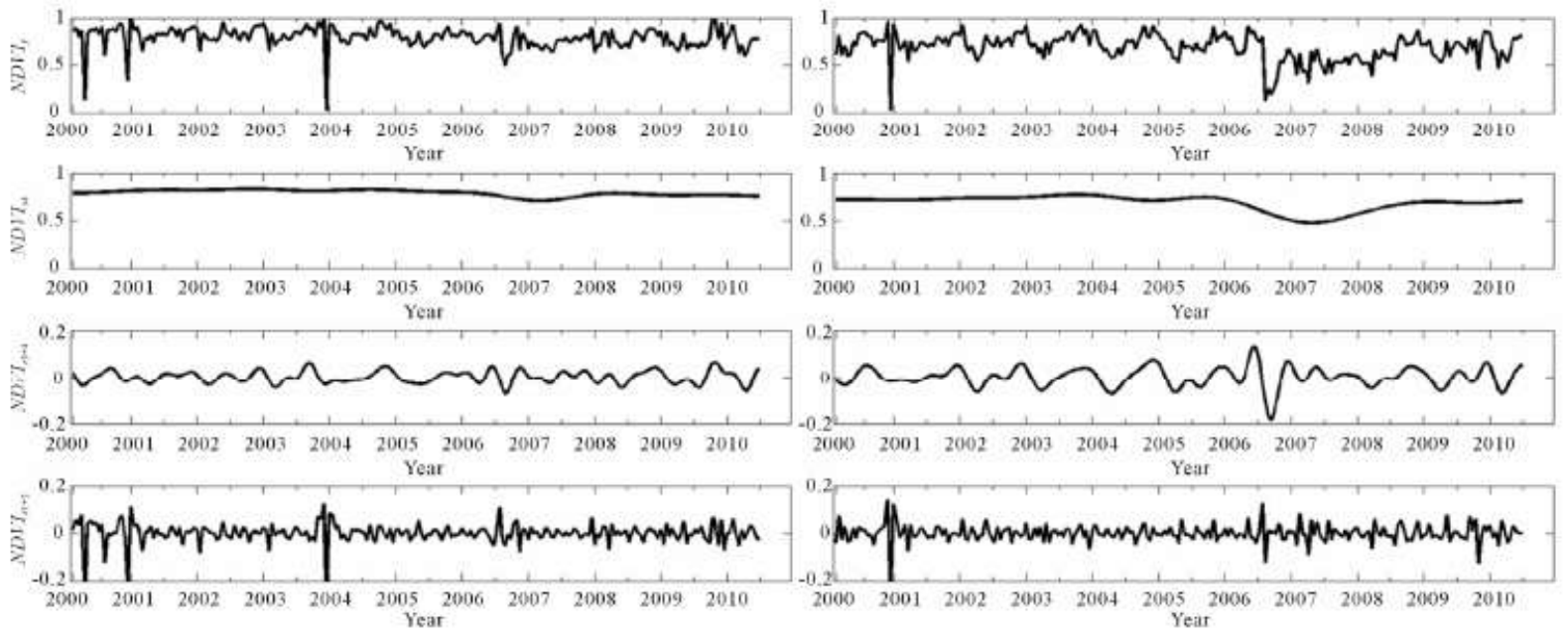
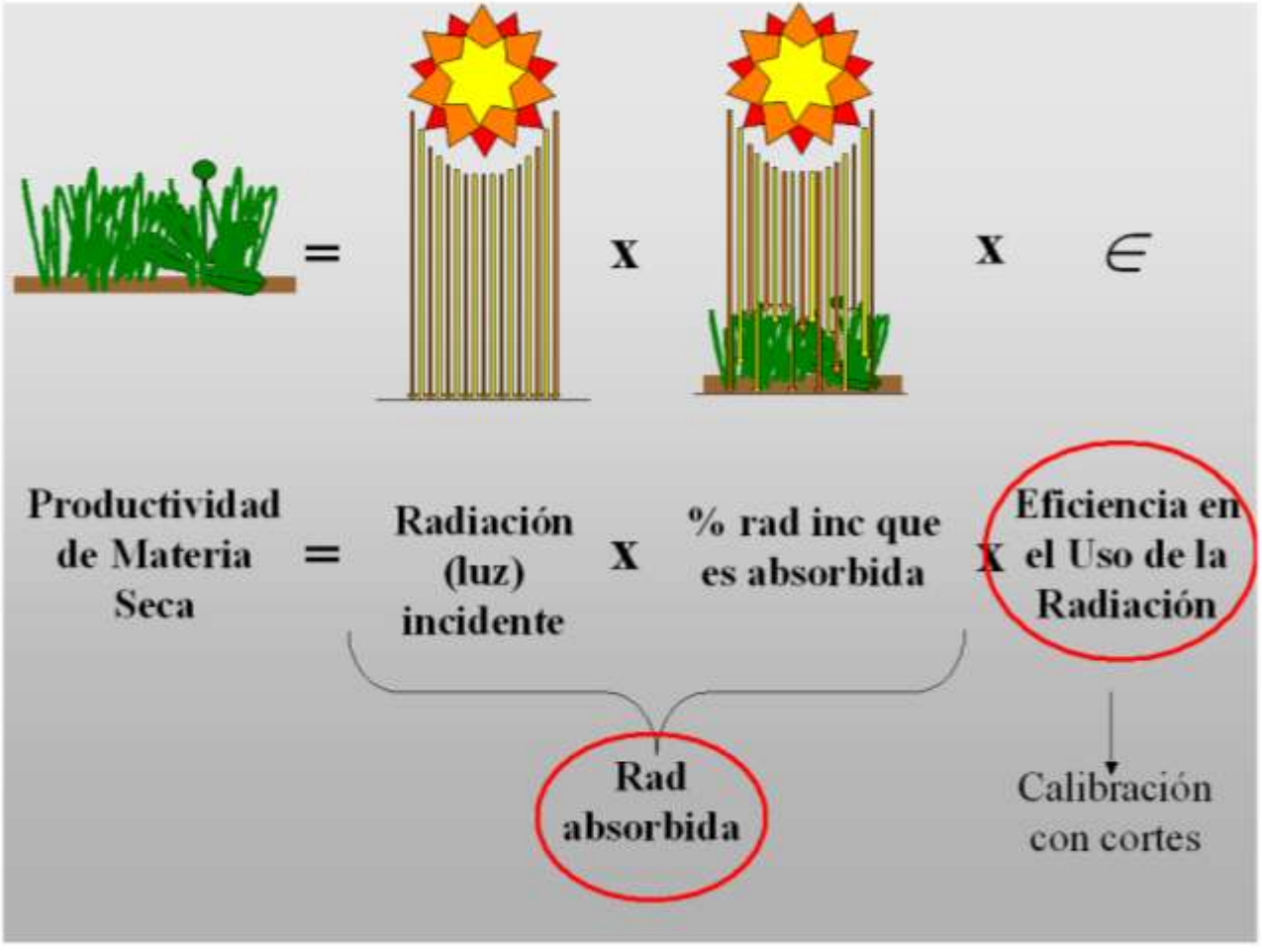
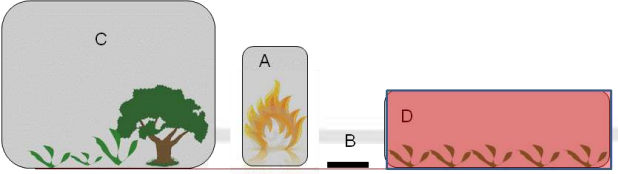


Figure 5. Wavelet decomposition of 2000-2010 NDVI time series of control site (column a) and fire event location (column b). $NDVI_f$ is the original time series, $NDVI_{s4}$ is the interannual component, $NDVI_{r4+3}$ is the seasonal component, and $NDVI_{r1+2}$ is the rapid changes component.

El modelo de Monteith (1980) relaciona la Productividad con la absorción de energía



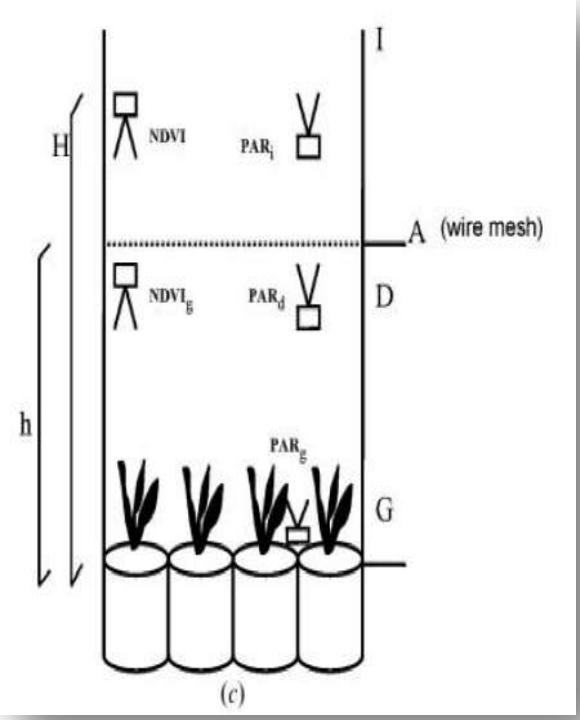


INT. J. REMOTE SENSING, 10 DECEMBER, 2004,
VOL. 25, NO. 23, 5415–5427

Taylor & Francis

Effect of senescent leaves on NDVI-based estimates of *f*APAR: experimental and modelling evidences

C. M. DI BELLA †‡*, J. M. PARUELO§, J. E. BECERRA†§, C. BACOUR¶ and F. BARET¶



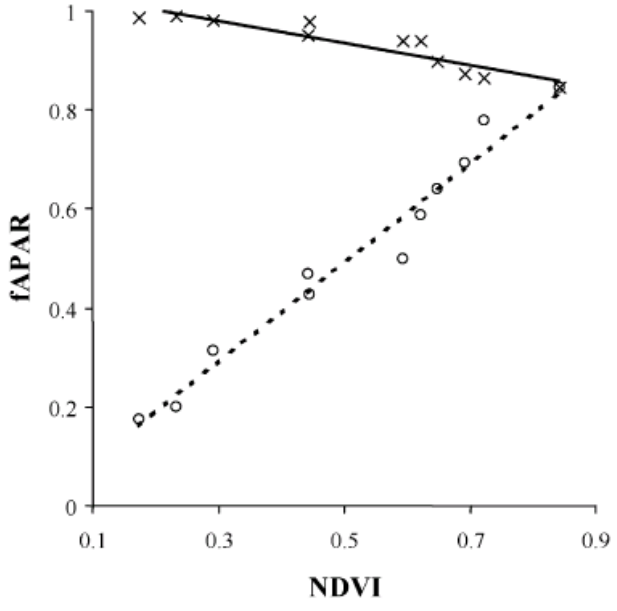


Figure 5. Fraction of PAR absorbed by the whole canopy (*f*APAR, +) and by the green elements (*f*APAR$_g$, o) as a function of NDVI. The lines correspond to the theoretical relationship derived from equations (13) and (14).

Di Bella et al. 2004

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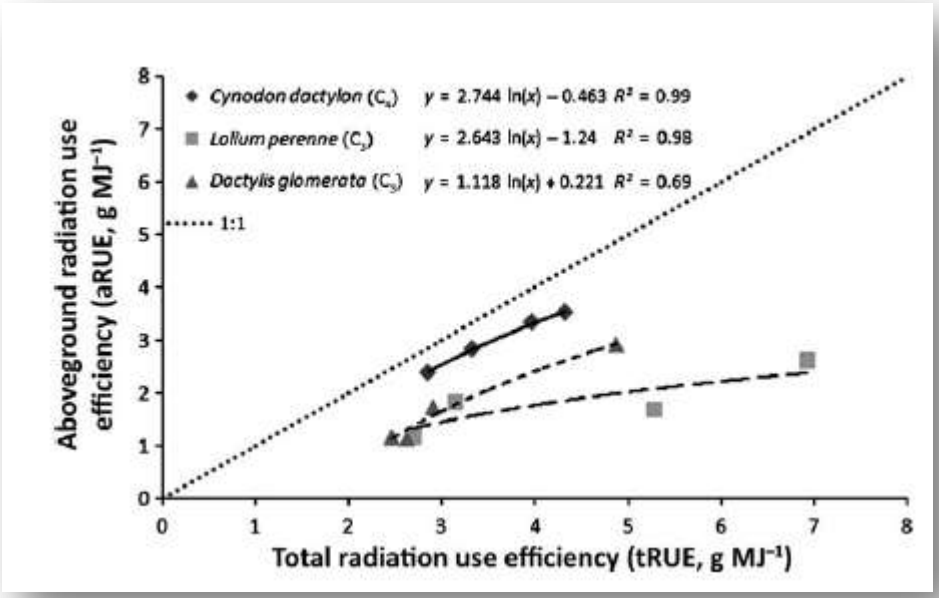
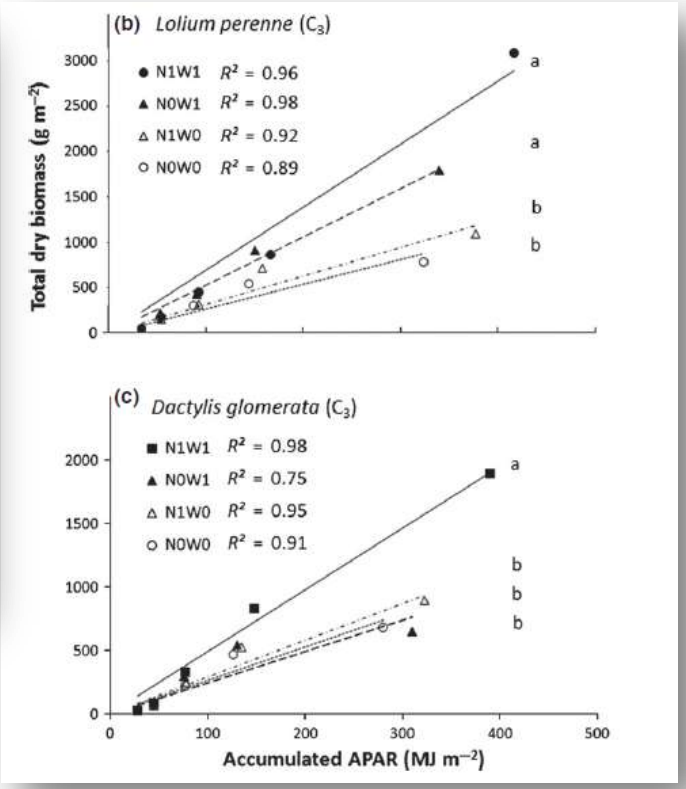
ORIGINAL ARTICLE

Total and aboveground radiation use efficiency in C_3 and C_4 grass species influenced by nitrogen and water availability

Piedad M. Cristiano[1], Gabriela Posse[2] and Carlos M. Di Bella[2,3]

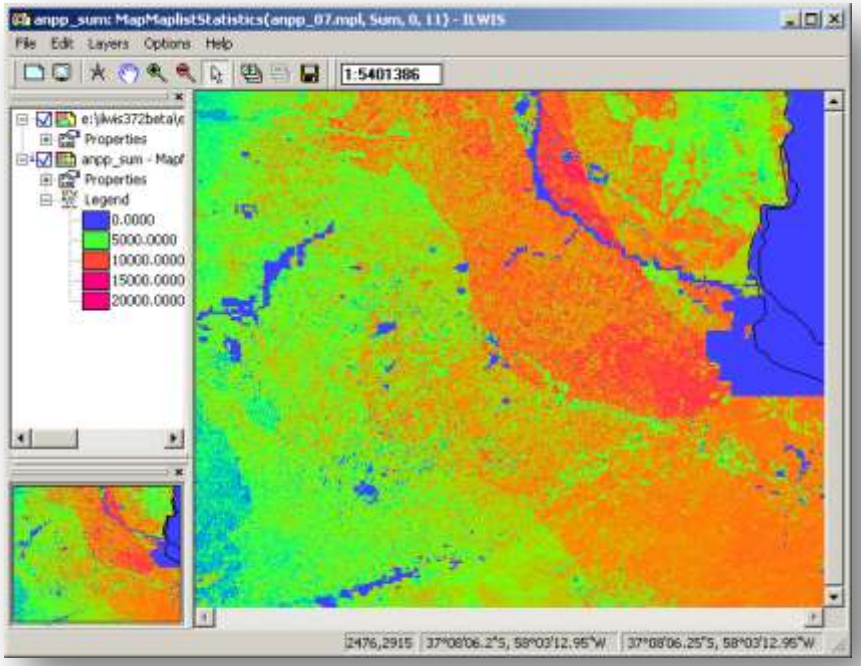
1 Faculty of Science and Natural Sciences, University of Buenos Aires, Buenos Aires, Argentina
2 Climate and Water Institute, National Institute of Agricultural Technology (INTA), Hurlingham, Buenos Aires, Argentina
3 National Council for Scientific Research and Techniques (CONICET), Buenos Aires, Argentina





8. ABOVEGROUND NET PRIMARY PRODUCTIVITY ESTIMATION OF PAMPA GRASSLANDS USING MODIS AND GOES DATA

By: Piedad M. Cristiano[1], María Eugenia Beget[2], Carlos Di Bella[12], Gabriela Posse[2] and Tomás Hartmann[2]



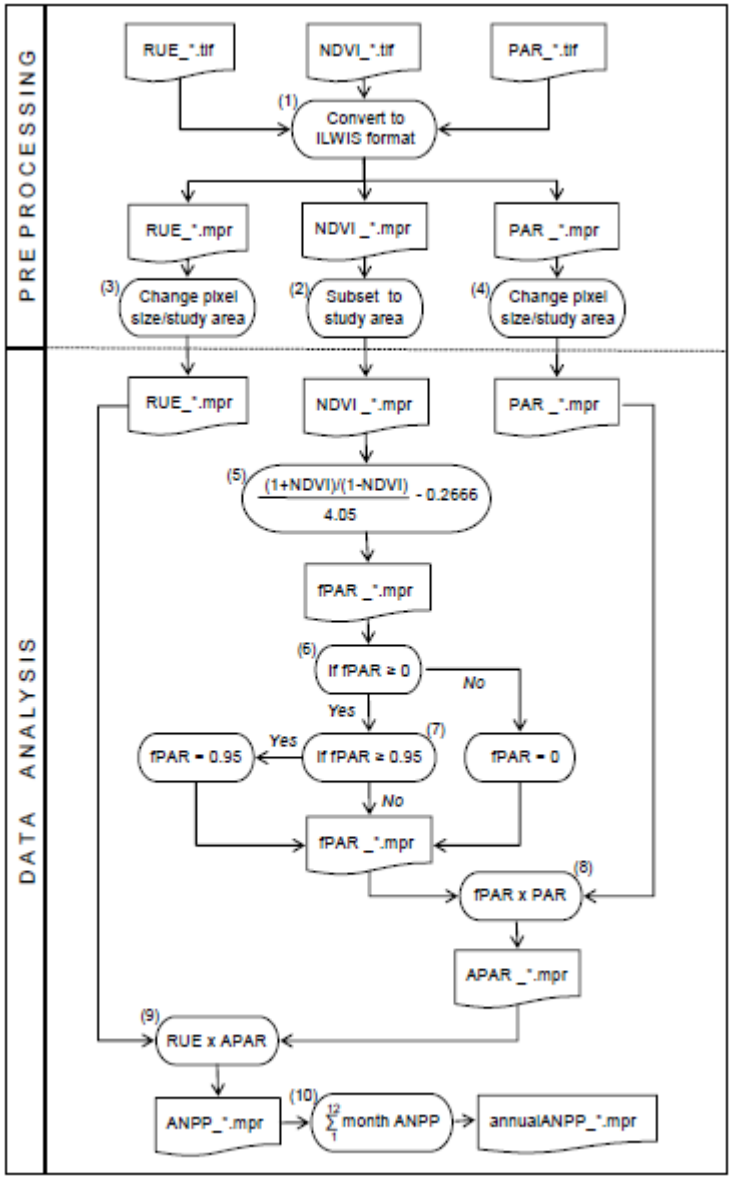


Figure 8.1 Flow chart of the followed methodology

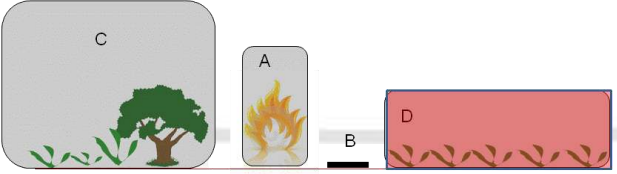
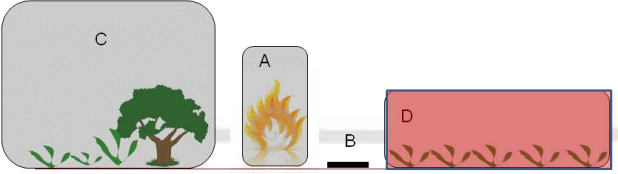


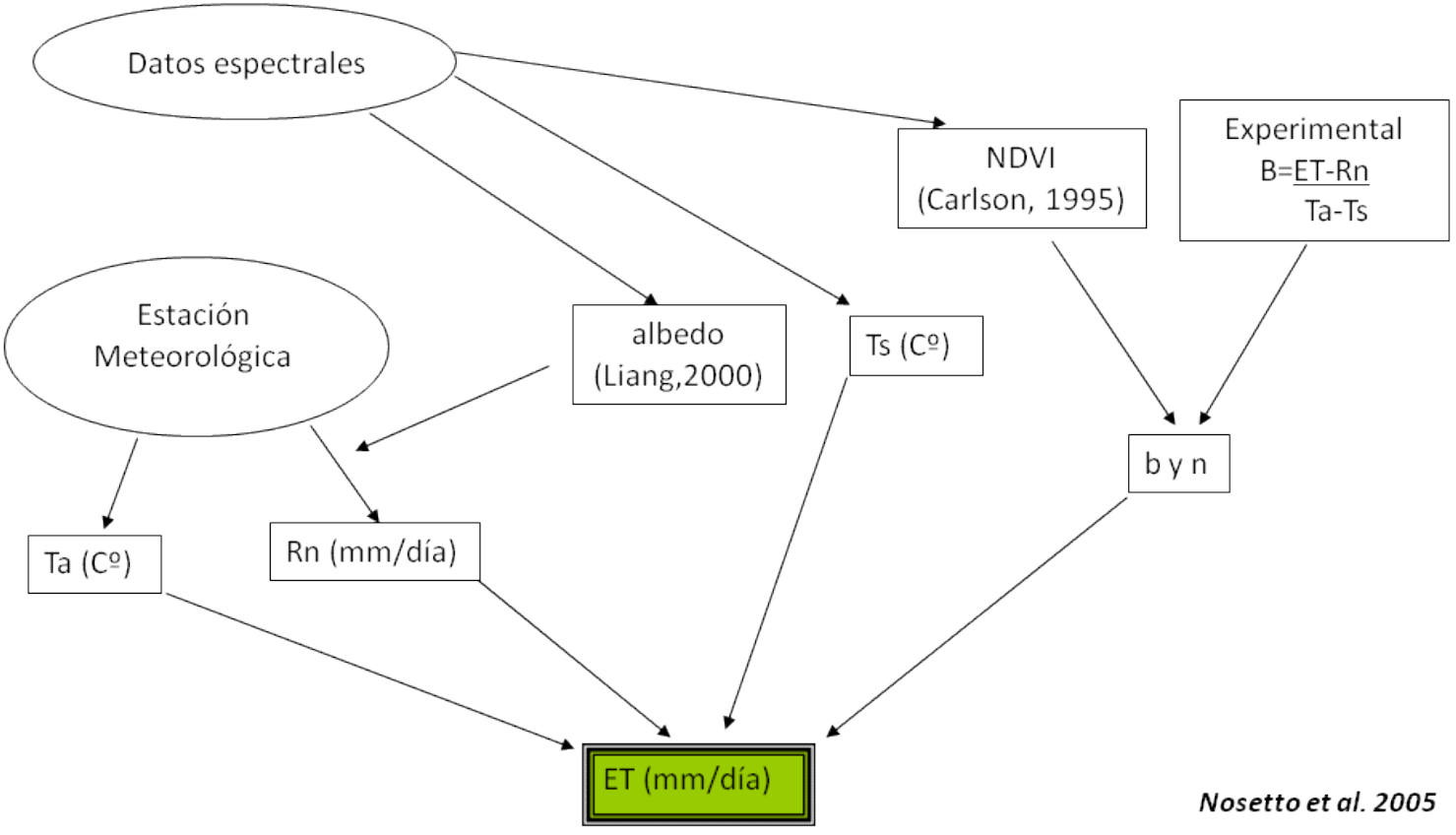
Tabla 9.3 Características de las diferentes categorías de modelos para el cálculo de ET según Courault *et al.*, (2003).

Categoría	Complejidad	Cálculos	Precisión	Aplicación	Resolución temporal
Métodos empíricos directos	Baja	Empíricos	Baja/ media	Local	Diaria
Métodos que utilizan el balance de energía	Baja/ media	Empíricos y con base física	Media	Local/ global	Mensual/ Diaria
Métodos indirectos	Alta	Con base física	Alta	Global	Hora/minuto segundo

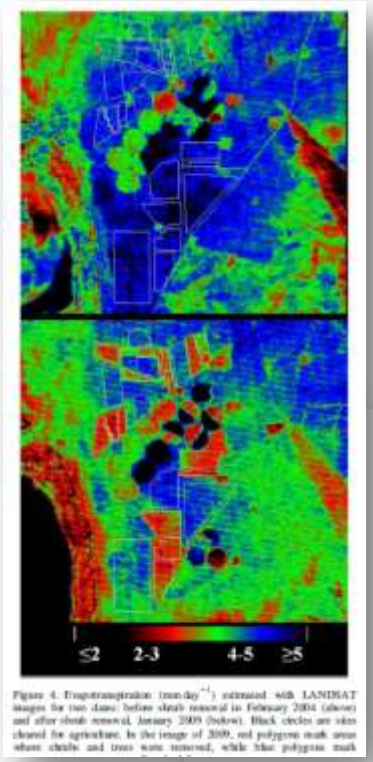


$$ET = Rn - b\,(Ts - Ta)^n$$

Jackson et al. 1977



Nosetto et al. 2005



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Changes in evapotranspiration and phenology as consequences of shrub removal in dry forests of central Argentina

Victoria A. Marchesini,[1]* Roberto J. Fernández,[1] James F. Reynolds,[2] José A. Sobrino[3] and Carlos M. Di Bella[4]

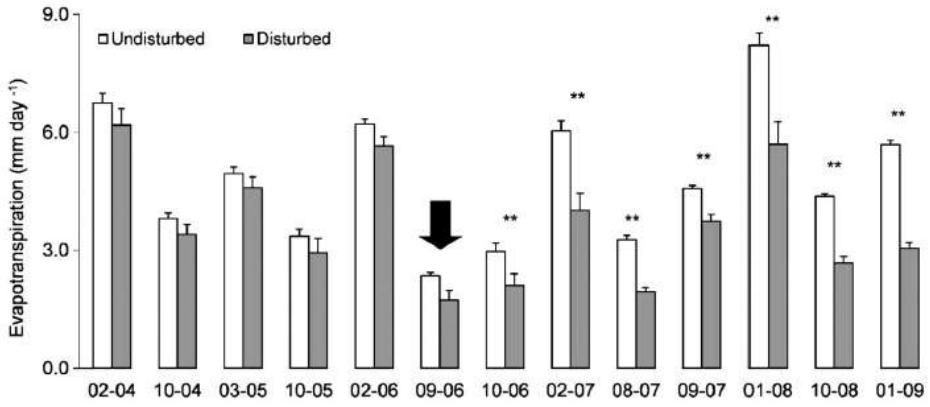
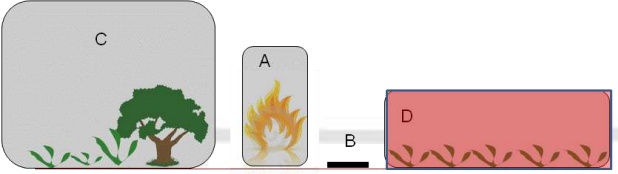


Figure 3. Average values and standard errors for evapotranspiration (mm day^{-1}) estimated from LANDSAT images for disturbed areas cleared in 2006 ($n = 5$) and their contiguous undisturbed plots ($n = 7$). Data are shown before and after clearing to highlight the effect of vegetation removal on evapotranspiration. The black arrow indicates time of woody vegetation removal. Date is indicated by month/year. Asterisks show significant disturbance effect at $P < 0.001$.

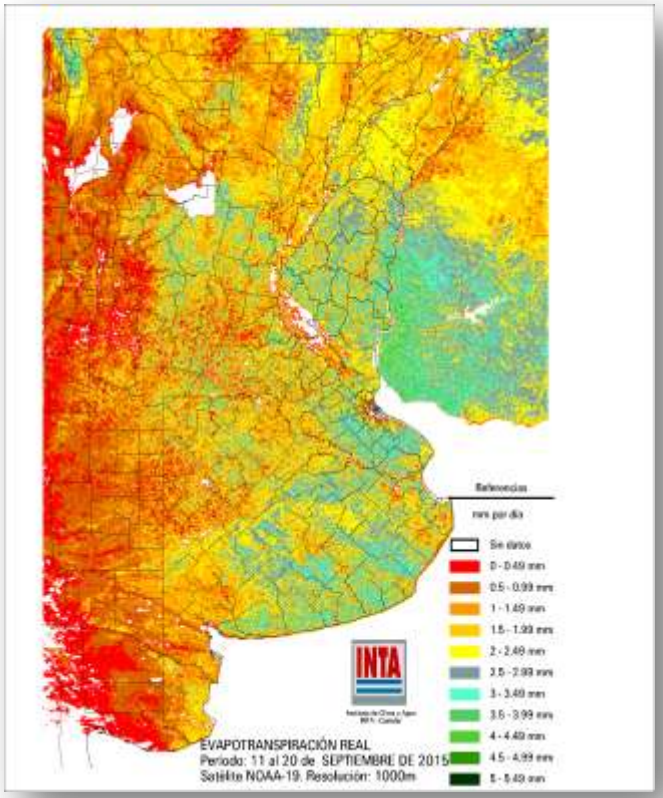


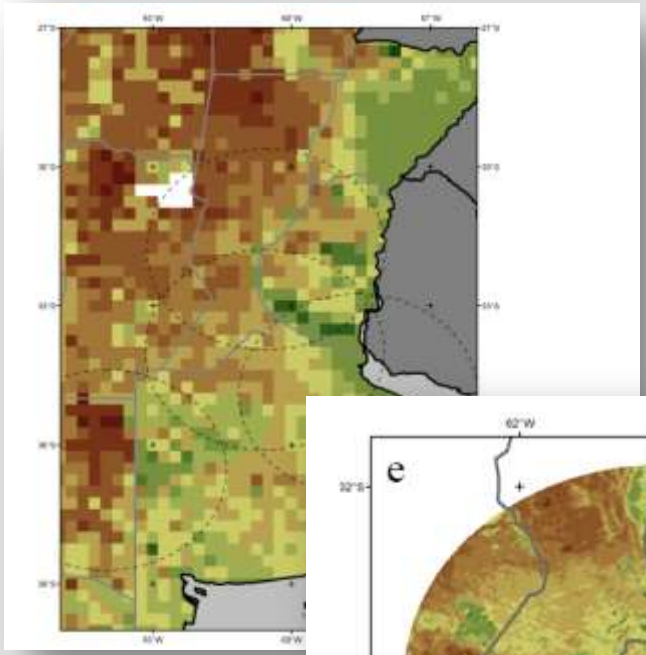
INT. J. REMOTE SENSING, 2000, VOL. 21, NO. 4, 791–797

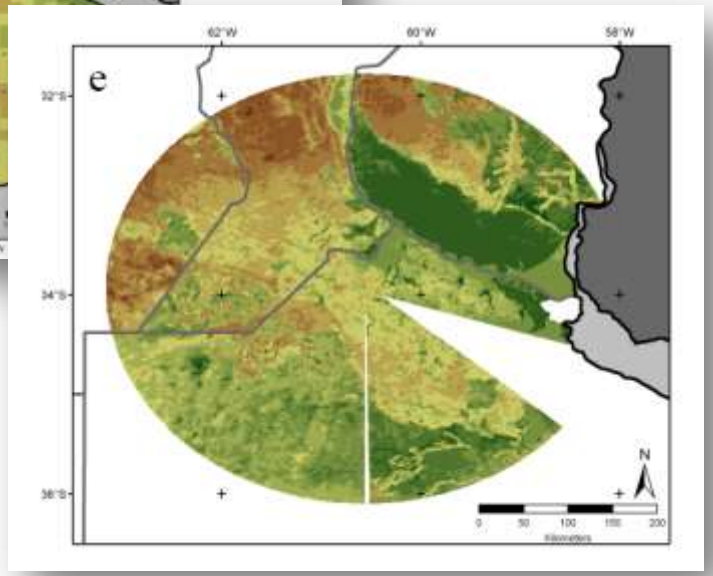
Evapotranspiration estimates using NOAA AVHRR imagery in the Pampa region of Argentina

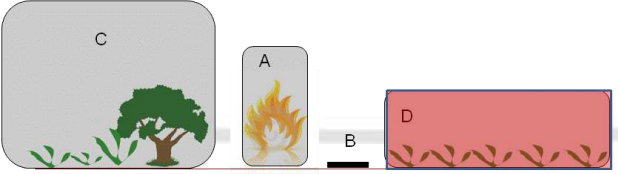
C. M. DI BELLA†, C. M. REBELLA† and J. M. PARUELO‡

ET (mm) = -88.3439 + 1.77636 Ts (°C) + 286.406 IVN









Arbustos y Pastos

Productividad sotobosque

Material senescente

MUCHAS GRACIAS

dibella.carlos@inta.gob.ar
@dibella_carlos