Poa pratensis 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Cyperales	Poaceae

Common name
northern meadow grass (English), smooth-stalked meadow grass (English), common meadow grass (English), Kentucky bluegrass (English), green grass (English), spreading bluegrass (English), bird grass (English), grama de prados (Spanish), English grass (English), spear grass (English), capim-do-campo (Portuguese), June grass (English), Wiesenrispengras (German), blue grass (English), smooth meadow grass (English), narrow-leaf meadow grass (English), zacate poa (Spanish), schmalblättriges Rispengras (German), poa común (Spanish), pâturin des prés (French)

Synonym
Poa alpigena
Poa angustifolia , L.

Similar species
Poa annua

Summary
Kentucky bluegrass (*Poa pratensis*) is a rhizomatous grass that is regarded as a crop in some systems, but as a weed in others. It is highly valued as a pasture and turf grass, particularly in golf courses. However, it is considered an invasive weed in natural grassland ecosystems where it outcompetes native species and reduces biodiversity and alters nitrogen cycling and ecosystem function.

view this species on IUCN Red List

Species Description
Poa pratensis is a perennial, cool season mat-forming grass. The wide, creeping rootstock produces underground runners and leafy shoots. Runners creep under the surface of the ground and produce upright leafy stems from their ends. The stems are from 15cm to 1m in height, and eventually develop into flower-bearing stems (Clarke & Malte, 1913). Seedhead panicles have an open-pyramid shape and produce numerous small seeds (Bush, 2002). Each branch of the panicle carries several spikelets which are bluish green to purple. Each spikelet has four to five flowers enclosed within two glumes of equal size (Clarke & Malte, 1913). Leaves are smooth, soft and measure 1/8 to ¼ inch wide and 6 to 12 inches long with keeled tips (Bush, 2002). Kentucky bluegrass can be distinguished from other grasses by its narrow leaf blade which is V-shaped in cross section and boat-shaped tip.

Notes
Four subspecies have been identified: *Poa pratensis alpigena*, *P. pratensis colpodea*, *P. pratensis irrigata* and *P. pratensis pratensis* (ITIS 2008). There are also numerous cultivars.

Lifecycle Stages
Poa pratensis becomes dormant in summer, but regains green colour in autumn. Growth starts in early spring with tiller buds developing into stems or rhizomes (Bush, 2002). It grows early in the season when most other species are still dormant, and can thus spread very quickly (Wisconsin Department of Natural Resources, 2004).

Uses
Kentucky blue grass has value as a pasture grass and hay. It is palatable and is of high fattening value, and provides excellent forage for early livestock grazing (North Dakota Department of Agriculture, 2005). It is also used for beautification of parks and home lawns, and as a turf that is useful for heavy use areas such as campgrounds, golf fairways, picnic areas and ball fields. It is also used in erosion control due to its dense, vigorous turf forming habit. This plant also provides food for elk, deer, rabbits and turkey. Its seeds are eaten by birds and rodents (Bush, 2002).\r\n
Despite being a non-native grass species, *Poa pratensis* provides important habitat and oviposition sites for the rare grass skipper *Polites mardon* in the United States (Beyer & Schultz, 2010).

Habitat Description
Kentucky bluegrass can grow in many habitat types including meadows, roadsides, forest edges, dry hills, marshes and along seashores (Clarke & Malte, 1913).

Reproduction
Kentucky bluegrass is a shallow-rooted, perennial grass that reproduces both vegetatively and via seed. Once established plants expand mainly through the formation and growth of rhizomes and tillers, which are responsible for the sod-forming capability of the plant (North Dakota Department of Agriculture, 2005).\r\n
Each panicle (flower) is capable of producing between 100 to 200 seeds that can remain viable for up to two years. Seeds germinate in autumn after a chilling period. Seedlings establish forming a short tuft, rhizomes and tillers (North Dakota Department of Agriculture, 2005).

Nutrition
Poa pratensis is best adapted to well-drained, fertile, medium-textured soils of limestone origin, although it can survive on poorly-drained and heavy textured soils. It prefers soils of pH 6.0 to 7.5. Optimum temperatures for growth are between 15.5 to 32°C and it grows best in humid areas. It prefers high sunlight areas but can do well in light shade if moisture and nutrients are sufficient. It is usually dormant during dry or hot weather but can survive severe droughts.

General Impacts
Sod forming grasses such as *Poa pratensis* are known to have negative effects on native prairie species in the northern Great Plains of the United States (Larson & Larson, 2010 and references therein). It outcompetes native plant species and reduces biodiversity in invaded areas (North Dakota Department of Agriculture, 2005). For example the vital rates and population growth rate of a native grass, *Anemone patens* was greatly reduced when growing among *P. pratensis* and other invasive grasses (Williams & Crone, 2006).\r\n
Litter produced by Kentucky bluegrass forms thick mats of “slicks” on the soil surface (Hendrickson & Lund, 2010). Litter from Kentucky bluegrass is known to inhibit seedling establishment of other plant species (Bosy & Reader, 1995). \r\n\r\n\r\n
Kentucky bluegrass has been found to disrupt ecosystem function by altering nitrogen cycling and carbon storage, lowering plant diversity and shifting seasonal forage production. These impacts affect livestock production, wildlife habitat and ecosystem services (Hendrickson & Lund, 2010 and references therein).

Management Info
Controlled areas should be closely monitored because seeds of Kentucky bluegrass can remain viable for two years and the plant can continue to spread by tillers and rhizomes.\r\n
Physical: Mowing and raking are generally ineffective against Kentucky bluegrass, and can actually stimulate rhizome and tiller production. Therefore mowing is not recommended (Hendrickson & Lund, 2010; North Dakota Deparment of Agriculture, 2005).\r\n
Burning: Burning of Kentucky bluegrass can have variable results. Some studies have found Kentucky bluegrass to be negatively affected by fire (Hendrickson & Lund, 2010 and references therein). Timing of the prescribed burn, moisture and site conditions are important factors that may influence the response of the plant to burning. It is also important to consider native species composition of the area and what species will replace Kentucky bluegrass. Burning usually needs to be repeated annually for several years (North Dakota Department of Agriculture, 2005)\r\n\r\n\r\n\r\n
Chemical: Glycophosphate is effective in reducing infestations of *Poa pratensis* (Wisconsin Department on Natural Resources, 2004; North Dakota Department of Agriculture, 2005). Imazapyr and sulfometuron methyl can also provide control. However chemical control may not be the preferred method of control in some regions due to the effect on native species (North Dakota Department of Agriculture, 2005).\r\n
In field experiments performed in the UK, Clay *et al*. (2006) found Poa pratensis to be moderately resistant to resistant to all graminicide herbicides tested. It was only moderately susceptible to susceptible to the broad-acting Glycophosphate in spring and autumn. Resistance was greater with autumn-applied herbicides than with spring applications. Established plants were more resistant than young plants.\r\n
Integrated Management: A study carried out in North Dakota, USA found that burning followed by herbicide (Imazapic) was more effective at reducing Kentucky bluegrass than burning or herbicide alone. Burning removed the heavy thatch layer associated with Kentucky blue grass which may have improved herbicide effectiveness. However this study also found that while burn/herbicide treatment decreased Kentucky bluegrass it caused an increase in smooth brome (*Bromus inermis*), a similar invasive grass species (Hendrickson & Lund, 2010), a patterns also found in a study by Williams and Crone (2006). Similarly mowing/raking which decreased smooth brome caused an increase in Kentucky bluegrass. Community composition was also important in determining the effectiveness of a control technique (Hendrickson & Lund, 2010). This study highlights the importance of considering other species, community composition and length of time since treatments were applied (Hendrickson & Lund, 2010).

Pathway
Seed contaminant.

Principal source:

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG) with support from the EU-funded South Atlantic Invasive Species project, coordinated by the Royal Society for the Protection of Birds (RSPB)
Updates with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

Review:

Pubblication date: 2010-08-23

ALIEN RANGE

[3] ANTARCTICA
[1] FALKLAND ISLANDS (MALVINAS)
[1] MEXICO
[1] SAINT HELENA
[1] CANADA
[6] FRENCH SOUTHERN TERRITORIES
[3] NEW ZEALAND
[2] SOUTH AFRICA

[2] SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS

[3] UNITED STATES

Red List assessed species 2: EN = 1; VU = 1;

Anthus spragueii **VU**

Platanthera praeclara **EN**

BIBLIOGRAPHY

32 references found for **Poa pratensis**

Managment information

Bergstrom, Dana M. and V.R. Smith., 1990. Alien vascular flora of Marion and Prince Edward Islands: new species present distribution and status. Antarctic Science, Volume 2, Issue 04, Dec 1990, pp 301-308

Bokhorst, Stef., Ad Huiskes., Peter Convey and Rien Aerts., 2007. The effect of environmental change on vascular plant and cryptogam communities from the Falkland Islands and the Maritime Antarctic. BMC Ecol. 2007; 7: 15. Published online 2007 December 19. doi: 10.1186/1472-6785-7-15.

Summary: Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2234391 [Accsessed 28 August 2008]

Clay, D.V., Dixon, F.L., Willoughby, I. 2006. Efficacy of graminicides on grass weed species of forestry. Crop Protection, 25: 1039–1050.

Hendrickson, J.R. & Lund, C. 2010. Plant Community and Target Species Affect Responses to Restoration Strategies. Rangeland Ecology and Management, 63: 435-442.

IUCN/SSC Invasive Species Specialist Group (ISSG)., 2010. A Compilation of Information Sources for Conservation Managers.

Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.

Larson, D.L. & Larson, J.L. 2010.Control of one invasive plant species allows exotic grasses to become dominant in northern Great Plains grasslands. Biological Conservation, 143: 1901-1910.

New Zealand Plant Conservation Network, 2005. Unwanted Organisms. Factsheet *Lonicera japonica*

Smith, R. I. Lewis., 1996. Introduced plants in Antarctica: Potential impacts and conservation issues . Biological Conservation. Volume 76, Issue 2, 1996, Pages 135-146

General information

Beyer, L.J. & Schultz, C.B. 2010. Oviposition selection by a rare grass skipper *Polites mardon* in montane habitats: Advancing ecological understanding to develop conservation strategies. Biological Conservation, 143: 862-872.

Bosy, J.L. & Reader, R.J. 1995. Mechanisms Underlying the Suppression of Forb Seedling Emergence by Grass (*Poa pratensis*) Litter. Functional Ecology, 9(4): 635-639

Bush, T. 2002. Plant Fact Sheet. Kentucky bluegrass *Poa pratensis* L.

Summary: Available from: http://plants.usda.gov/factsheet/pdf/fs_popr.pdf [Accessed 23 August, 2010]

Clarke, G.H. & Malte, M.O. 1913. Fodder And Pasture Plants. Canada Department of Agriculture.

Summary: Available from: http://chestofbooks.com/flora-plants/weeds/Fodder-Pasture-Plants/Kentucky-Blue-Grass-Poa-Pratensis-L.html [Accessed 23 August, 2010]

Edwards, J. A., 1979. An Experimental Introduction of Vascular Plants from South Georgia to the Maritime Antarctic. British Antarctic Survey Bulletin., No 49, 1979, p 73-80.

Edwards, J. A and Dorothy M. Greene., 1973. The Survival of Falkland Islands Transplants at South Georgia and Signy Island, South Orkney Islands. British Antarctic Survey Bulletin., No 33 & 34, 1973, p 33-45.

Falklands Conservation, undated. Falkland Islands Wildlife. A Check List of Mammals, Freshwater Fish, Birds and Plants

Summary: Available from: http://www.falklandsconservation.com/wildlife/chklst.html [Accessed 25 October 2009]

Frenot, Y., Chown, S.L., Whinam, J., Selkirk, P., Convey, P., Skotnicki, M., & Bergstrom, D. 2005. Biological invasions in the Antarctic: extent, impacts and implications. Bio. Rev, 80, 45-72.

Summary: Article de synth–se sur les invasions biologiques (plantes, invert–br–s et vert–br–s) en antarctique.

Available from: http://www.anta.canterbury.ac.nz/resources/non-native%20species%20in%20the%20antarctic/Talk%202%20Frenot.pdf [Accessed 4 April 2008]

Frenot, Y., Gloaguen, J., Mass–, L., & Lebouvier, M. 2001. Human activities, ecosystem disturbance and plant invasions in subantarctic Crozet, Kerguelen and Amsterdam Islands. Biological Conservation, 101, 33-50.

Summary: Cette article propose une liste des plantes exotiques pour 3 des –les subantarctiques fran–aises. Le r–le pass– et pr–sent des activit–s humaines dans les ph–nom–nes d invasions est discut–.

Huntley B. J, 1971. Vegetation. In: Zinderen Bakker E. M van, Winterbottom J. M, Dyer R. A (eds) Marion and Prince Edward Islands. Balkema, Cape Town, pp 98–160

ITIS (Integrated Taxonomic Information System), 2008. Online Database *Poa pratensis* L.

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=41088 [Accessed 25 October 2008]

Kelley, A.D. & Bruns, V.F. 1975. Dissemination of Weed Seeds by Irrigation Water. Weed Science, 23(6): 486-493.

Longton, R. E., 1966. Alien Vascular Plants on Deception Island, South Shetland Islands. British Antarctic Survey Bulletin., No 9 1966, p 55-60.
North Dakota Department of Agriculture. 2005. Kentucky bluegrass (*Poa pratensis*).
Summary: Available from: http://www.agdepartment.com/noxiousweeds/pdf/Kentuckybluegrass.pdf [Accessed 23 August, 2010]
Pratt, R. M. and R. I. Lewis Smith., 1982. Seasonal Trends in Chemical Composition of Reindeer Forage Plants on South Georgia. Polar Biol (1982) 1:13-32
Shanklin, Jonathan., March 29 2006. The flora of King Edward Point & Grytviken
Summary: Available from: http://www.antarctica.ac.uk/met/jds/natural_history/bird_island/KEP_FLORA.htm [Accessed 19 January 2009]
Starr, F. & Starr, K. 2010. *Poa pratensis* (Kentucky bluegrass). Plants of Hawaii.
Summary: Available from: http://www.hear.org/starr/images/species/?q=poa+pratensis&o=plants#more [Accessed 23 August, 2010]
Summers, Ronald W., 1983. The life cycle of the Upland Goose *Chloephaga picta* in the Falkland Islands IBIS 125: 524-544 1983
United States Department of Agriculture - Agricultural Research Service (USDA-ARS). 2008. Taxon: *Poa pratensis* L. National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland.
Summary: Available from: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?28996 [Accessed 25 October 2009]
Vidal, Eric, Pierre Jouventin & Yves Frenot, 2003. Contribution of alien and indigenous species to plant-community assemblages near penguin rookeries at Crozet archipelago. Polar Biol (2003) 26: 432–437 DOI 10.1007/s00300-003-0500-5
Walton, D.W.H., 1975. European weeds and other alien species in the Subantarctic. Weed Research, 1975, Volume 15, 271-282
Wennerberg, S. 2004. Plant Guide. Kentucky bluegrass *Poa pratensis* L.
Summary: Available from: http://plants.usda.gov/plantguide/pdf/pg_popr.pdf [Accessed 23 August, 2010]
Williams, J.L. & Crone, E.E. 2006. The Impact of Invasive Grasses on the Population Growth of *Anemone patens*, a Long-Lived Native Forb. Ecology, 87(12): 3200-3208.
Wisconsin Department of Natural Resources. 2004. Kentucky Bluegrass (*Poa pratensis*).
Summary: Available from: http://dnr.wi.gov/invasives/fact/bluegrass_kent.htm [Accessed 23 August, 2010]