Maintenance History

Date	Table	Change

Comment

TBL_Contact

Key	Field Name	Data Type	Values
Y	ID	AutoNumber	
	Address1	Text (100)	
	Address2	Text (100)	
	City	Text (100)	
	State	Text (50) Single Choice	
	Country	Text (50) Single Choice	
	PostalCode	Text (15)	
	Phone1	Text (25)	
	Phone2	Text (25)	
	Email	Text (100)	
	Website	Text (255)	

Description	Comments
Unique identifier	
Address line 1	
Address line 2	
City	
US states, Canadian provinces, etc.	
Countries	
Zip Code or other postal code	
Primary phone number	
Primary phone number	
Email address	
Website URL	

TBL_Image

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique identifier
	Address	Text (255)		Address of image
	FileType	1-?		1=jpg, 2=?
	TaxonID	Integer		Link to TBL_Taxon
	LocationID	Integer		Link to LKU_Location
	Citation	Text (100)		Citation for Image
	ImageYear	Text (15)		Year of image
	Webpage	Text (255)		Webpage on which image is found
	Info	Text (255)		Information about image
	Caption	Text (255)		Caption for the image
	IsLocal	Boolean		Yes if local file, no if Internet link
	ImageType	1,2		1 Photo or Drawing, 2 Map
	ImageUse	Text (255)		Usage information

Comments

Key	Field Name	Data Type	Values

TBL_Introduction

Blue indicates that info actually comes from the Property table.

Y	ID	AutoNumber	
	TaxonToLocationID	Integer	
	ReferenceID	Integer	
	Time	Text (255)	
	Location	Text (255)	
	Evidence	Memo	
	Purposeful	Text (10)	
	Mode	Text Categorical Multiple Choice	Agriculture, Horticulture, Forage/Grazing, Seed Contamination, Animal Transport (Internal), Animal Transport (External), Water Transport, Land Vehicle Transport, Ship Bilge, Restoration, Soil Stabilization

Comments

Unique identifier
Link to REL_TaxonToLocation
Link to REL_IntroductionToReference
Time period of introduction
Introduction location
Evidence supporting the introduction
Yes, No, Unknown

Mode of Introduction

TBL_Organism

Key	Field Name	Data Type	Values
Y	Org_ID	AutoNumber	
	Kingdom	Text (50)	
	Phylum	Text (50)	
	Class	Text (50)	
	Order	Text (50)	
	Family	Text (50)	
	Genus	Text (50)	
	Species	Text (50)	
	CommonNames	Text (255)	
	OtherNames	Text (255)	
	Type	Text (15) Single Choice	Plant, Mammal, Reptile, Arthropod, Nematode, Mollusc, Annelid, Bacterium, Virus, Phytoplasm, Fungus,

Description	Comment
Unique identifier	
Taxonomy information	
Taxonomy information	
Taxonomy information	
Taxonomy information	
Taxonomy information	
Taxonomy information	
Taxonomy information	
Common names	
Alternative scientific names	
General description of organism type	

TBL_Organization

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique Identifier
	OrganizationName	Text (255)		Name of organization
	OrganizationShortName	Text (25)		Short Name or Abbreviation for Organization
	Description	Memo		Description of and information about organization
	ContactID	Integer		Link to TBL_Contact

Comments

TBL_Person

Key	Field Name	Data Type	Values
Y	ID	AutoNumber	
	LastName	Text (50)	
	FirstName	Text (50)	
	MiddleName	Text (50)	
	Initials	Text (12)	
	Title	Text (255)	
	Interests	Text (255)	
	Comments	Memo	
	Display	Boolean	
	ContactID	Integer	

Description	Comments
Unique identifier	
Last name	
First name	
Middle name	
Initials	
Title	
Areas of interest	
Additional information	
Display this person in list of Bromus researchers/managers /etc.	
Link to TBL_Contact	

TBL_Project

Key	Field Name	Data Type	Values
Y	ID	AutoNumber	
	ProjectName	Text (255)	
	ProjectShortName	Text (25)	
	Description	Memo	
	ContactPerson	Text (225)	
	ContactID	Integer	

Description	Comments
Unique identifier	
Name of the project	
Short Name or Abbreviation for project	
Description of and information about the project	
Name of the Project Lead or Contact Person	
Link to TBL_Contact	

TBL_Reference

Key	Field Name	Field Type	Categorical Values
Blue indicates that info actually comes from the Categorical table.			
Y	Ref_ID	AutoNumber	
	Ref_Type	Text Categorical (Single)	Article in Peer Reviewed Journal, Article, Not Peer Reviewed, Agency Report or White Paper, ation, Paper in Collection, Book, Web Site, Dissertation, Thesis, Personal Correspondence, Other
	Ref_Title	Text (255)	
	Ref_Authors	Text (255)	
	Ref_Journal	Text (255)	
	Ref_Collection	Text (255)	
	Ref_VolPage	Text (20)	
	Ref_Year	Text (4)	
	Ref_Website_URL	Text (255)	
	Ref_Org	Text (255)	
	Ref_Keywords	Text (255)	
	Ref_Abstract	Memo	
	Ref_Habitat	Memo	
	Ref_PrimSpecies	Text (255)	
	Ref_OtherSpecies	Text (255)	
	Ref_Time_Period	Text (255)	
	Ref_Funding_Sources	Text (255)	
	(ReferenceStudyType)	Text Categorical (Multiple)	Field, Common Garden, Greenhouse Nutrient Manipulation, Water Manipulation, Temperature Manipulation, Herbarium Specimens, DNA Analysis, Protein Analysis, Restoration

(ReferenceStudyTopic)	Categorical (Multiple)	Soil, Nutrients, Plant_Traits, Interaction , Introduction, Population_Change, Genetic_Diversity, Hybridization, Plasticity, Restoration, Weather/Climate

Description	Comments	Key
		Blue indicat
Primary Key Field for Reference		Y
Type of reference, only one value applies.		
Title of reference		
Authors of reference		
Peer reviewed journal		
Name of a collection		
Volume and Page		
Year		
URL for a website		
Sponsoring organization, agency, or university		
Keywords provided by reference		
Abstract provided by reference		
Description of habitat or habitats given by reference	Community, Soil, Climate, Nutrients, Elevation, etc.	
Primary species studied		
Other species included in study		
Time period of study		
Funding Sources for study		
Categoricals stored in Property table for types of study.		

Categoricals stored in Property table for topics of study

Field Name	Field Type	Categorical Values	Description
tes that info actually comes from the Property table.			
ID	AutoNumber		Unique identifier
ReferenceType	Text (40) Single Choice	Article in Peer Reviewed Journal, Article not Peer Reviewed, Agency Report or White Paper, Paper in Collection, Book, Web Site, Dissertation, Thesis,	Type of reference, only one value applies.
Title	Memo		Title of reference
Authors	Memo		Authors of reference
Journal	Text (255)		Peer reviewed journal
Volume	Text (20)		Volume
Issue	Text (20)		Issue
Pages	Text (20)		Pages
YearPublished	Text (4)		Year
InlineCitation	Text (255)		Text to be used for inline citation
URL	Text (255)		URL for a website
Organization	Text (255)		Sponsoring organization, agency, or university
Keywords	Memo		Keywords provided by reference
Abstract	Memo		Abstract provided by
Location	Memo		Location and habitat of study or collection site
PrimarySpecies	Text (255)		Primary species studied
OtherSpecies	Text (255)		Other species included in study
StudyTimePeriod	Text (255)		Time period of study
FundingSources	Text (255)		Funding Sources for study
StudyType	Text Multiple Choice	Field, Common Garden/Reciprocal Transplant, Greenhouse/Laboratory, Chromosomal Analysis, DNA/RNA Analysis, Protein Analysis, Analysis of Other Organisms,	Categoricals stored in Property table for types of study.

Topic	Text	Multiple Choice	Taxonomy/Identification, Distribution, Introduction, Population Change, Plant Traits, Growth/Productivity, Photosysnthesis, Use/Effects of Soil, Use/Effects of Water, Use/Effects of Nutrients, Effects of Climate/Weather, Interactions with	Categoricals stored in Property table for topics of study

Comments

TBL_Taxon

Key	Field Name	Data Type	Values	Description	Comments
Green indicates that info actually comes from the TraitValue table. Blue indicates that info actually comes from the Property table.					
Y	ID	AutoNumber		Unique Identifier	
	Genus	Text (50)		Genus will be Bromus, Boissiera, or Littledalea	
	Section	Text (50)		Section name	
	Species	Text (50)		Species name	
	Subspecies	Text (50)		Subspecies	
	Variety	Text (50)		Variety	
	Authority	Text (100)		Authority	
	Year	Text (4)		Year of Authority Citation	
	CommonNames	Text (255)		Common Names	
	Synonyms	Memo		Older or Alternate Scientific Names	
	NativeRange	Text (255)		Brief text description of native range	
	CurrentRange	Text (255)		Brief text description of current range	
	DistributionRank	Integer (0 - 5)	0-5	0=Undetermined 1=Restricted to one or a few locations within a limited area, or believed to be extinct in the wild 2=Restricted to a moderate to large native range 3=Found outside of native range in native biogeographic realms or no more than one additional biogeographic realm 4=Naturalized in two biogeographic realms outside of native range 5=Naturalized in three or more biogeographic realms outside of native range	
	Habitat	Memo		Habitat Information	
	HybridizationInfo	Memo		Information about known instances of hybridization	
	Impacts	Memo		Effects of grass invasion on natural communities or human use of land	
	Management	Memo		Management practices	
	Comments	Memo		Other information that might be useful	
	ITISNumber	Integer		Number of ITIS record	
	GrassBaseNumber	Integer		Number of GrassBase record	
	NativeRealm	Text Multiple Choice	AfroTropic, Antarctic, Australasia, Indo_Malay, Nearctic, Neotropic, Oceana (Pielou)	Realms associated with native range - realms serve as an alternative to continents - Pielou, used by WWF in conjunction with Biomes	
	CurrentRealm	Text Multiple Choice	AfroTropic ,Antarctic, Australasia,Indo_Malay, Nearctic, Neotropic, Oceana (Pielou)	Realms associated with current range - realms serve as an alternative to continents - Pielou, used by WWF in conjunction with Biomes	
	C3C4	Text Multiple Choice	C3, C4	Photosynthesis Type	
	Lifecycle	Text Multiple Choise	Annual, Winter Annual, Spring/Summer Annual, Biennial, Perennial, Short-lived Perennial	Germination Time and Lifecycle	Winter annuals germinate in the fall or winter, flower in the spring. Spring annuals Spring/Summer
	Preferred Moisture Level	Text Multiple Choide	Dry, Medium, Moist/Wet	Type of habitat preferred in terms of moisture	
	DroughtTolerance	Text Multiple Choice	Low, Medium, High	Drought Tolerance	
	Salt Tolerance	Text Multiple Choice	Low, Medium, High	Salt Tolerance	
	ShadeTolerance	Text Multiple Choice	Low Medium High	Photosynthesis Type	
	Soil Preferences	Text Multiple Choice	Coarse, Medium, Fine	Types of soil preferred	

GlobalBiome	Text Multiple Choice	Xeric Shrublands, Flooded Grasslands and Savannas , Lakes, Mediterranean Forests Woodlands, and Scrub, Montane Grasslands and Shrublands, Rock and Ice, Tropical and Subtropical Coniferous Forests, Tropical and Subtropical Dry Broadleaf Forests, Tropical and Subtropical Grasslands, Savannas, and Shrublands, Tropical and	Global Biomes - WWF list of Biomes based on Dinerstein, et. al., and Rickets, et al.	
AsexualReproduction	Text Multiple Choide	None, Stolons/Runners, Rhizomes, Apomixis, Tillers	Methods of asexual reproduction	
MatingSystem	Text Multiple Choice	Selfing Only, Mostly Selfing, Selfing and Outcrossing, Mostly Outcrossing, Outcrossing Only	Drought Tolerance	
SeedDispersal	Text Multiple Choice	Wind, Animal(Internal), , Animal(External), Water, Vehicle, Seed/Mulch	Methods of seed dispersal	
SeedBank	Text Multiple Choice	Transient, Short-Term Persistent, Long-Term Persistent	Transient < 1 year, Short-Term Persistent = 1-5 years, Long-Term Persistent > 5 years	
Ploidy Level	Text Multiple Choice	Diploid, Polyploid	Diploid = 2n, Polyploid = xn where x>2	
Hybridization	Text Multiple Choice	Is a Hybrid, Known Hybridization, No Known Hybridization	Methods of seed dispersal	
(Associations with) Disturbance	Text Multiple Choice	Fire,Grazing/Overgrazing, Flood, Mining, Off-road Vehicle Damage, Roadsides, Waste Places, Old	Associations with disturbances	
Impacts	Text Multiple Choice	Diseases, Change to Fire Cycles, Change to Nutrient Levels, Change to Soil, Change to Water Levels, Crop Weed, Damage to Livestock, Damage to Natural Communities, Damage to Wildlife, Weed in Forage (Range), Forage (Crop), Horticultural, Restoration, Soil Stabilization, Mine Rehabilitation, Turf/Lawns. Development of		
HumanUse	Text Multiple Choice	Named Cultivars	Human Uses	
GrazingValue	Text Multiple Choide	Low Medium High		
MaximumCulmLength	Numeric (Integer)		Maximum Culm Length in Centimeters	Information available in Kew Gardens Grass
MinTemperature	Numeric (Integer)		Minimum of temperature range in degrees centigrade	
MaxTemperature	Numeric (Integer)		Maximum of temperature range in degrees centigrade	
MinpH	Numeric (Decimal)		Minimum of pH range	
MaxpH	Numeric (Decimal)		Maximum of pH range	
SpecificLeafArea	Numeric (Decimal)		measure of leaf thickness, area/weight of leaf or part of leaf	
RootShootRatio	Numeric (Decimal)		Measure of root weight/shoot rate ratio using dried plant material	
SeedsPerPlant	Numeric (Integer)		Seeds per plant/ramus	
1000SeedWeight	Numeric (Decimal)		Mean weight of a thousand seeds	
BasicChromosomeNumber	Numeric (Integer)		Number of chromosomes in one (haploid) set	
PloidyLevel	Numeric (Integer)		Number of sets of chromosomes	
GenomeSize	Numeric (Integer)		C-Value (the size of the unreplicated genome irrespective of ploidy level)	

TBL_TraitValue

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique Identifier	
	TraitValueGroupID	Integer		Link to LKU_TraitValueGroup	
	TaxonID	Integer		Link to TBL_Taxon	
	ValueType	Integer	1,2	1 = Integer, 2 = Decimal	
	IntegerValue	Integer		Integer property value	
	DecimalValue	Decimal		Decimal property value	
	ReferenceID	Integer		Link to TBL_Reference	
	Date Accessed	Date/Time		Date of access (for web sites)	
	Comments	Text(255)		Information about the trait value	

TBL_Weblink

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique Identifier
	Information	Text (255)		Brief information about the weblink
	URL	Text (255)		Url for weblink
	Caption	Text (255)		Caption for weblink
	Author	Text (255)		Author(s) of website
	Organization	Text (255)		Primary organization
	Category	Integer		(1=Taxonomic Information, Manuals, Floras, Keys, 2=Information about Invasive Species, 3=Management and Restoration, 4=Distribution Maps)

Comments

LKU_IntroductionProperty

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique identifier	
	PropertyGroupID	Integer		Link to LKU_IntroductionPropertyGroup	
	PropertyName	Text (65)		Name of the property	

LKU_IntroductionPropertyGroup

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique identifier
	PropertyGroupName	Text (65)		Name of the Property Group

Comments

LKU_Location

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique identifier
	LocationName	Text (50)		Name of country or state
	Abbreviation	Text (3)		Abbreviation for country or state
	LocationLevel	Integer		Level 1 = country, 2 = state, province, etc.
	ParentID	Integer		0 for country, ID of country for state

Comments

LKU_ReferenceProperty

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique identifier	
	PropertyGroupID	Integer		Link to LKU_IntroductionPropertyGroup	
	PropertyName	Text (65)		Name of the property	

LKU_ReferencePropertyGroup

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique identifier	
	PropertyGroupName	Text (65)		Name of the Property Group	

LKU_TaxonProperty

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique identifier
	PropertyGroupID	Integer		Link to LKU_PropertyGroup
	PropertyName	Text (65)		Name of the property

Comments

LKU_TaxonPropertyGroup

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique identifier	
	PropertyGroup Name	Text (65)		Name of the property group	

LKU_TraitValueGroup

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique identifier
	TraitValueGroupNa	Text (50)		Name of the Trait Value Group
	Units	Text (20)		Units for TraitValue Group

Comments

REL_IntroductionToIntroductionProperty

Key	Field Name	Data Type	Values
Y	ID	AutoNumber	
	IntroductionID	Integer	
	PropertyID	Integer	

Description	Comments
Unique Identifier	
Link to TBL_Introducton	
Link to LKU_Property	

REL_IntroductionToReference

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique Identifier	
	IntroductionID	Integer		Link to TBL_Introducton	
	ReferenceID	Integer		Link to TBL_Reference	
	DateAccessed	Date/Time		Date of access (for web sites)	

REL_PersonToOrganization

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique Identifier
	PersonID	Integer		Link to TBL_Person
	OrganizationID	Integer		Link to TBL_Organization
	Title	Text (255)		Title of person in organization
	Role	Text (255)		Brief description of person's role in the organization
	IsContact	Boolean		Yes if the person is a contact for the organization

Comments

REL_PersonToProject

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique Identifier
	PersonID	Integer		Link to TBL_Person
	ProjectID	Integer		Link to TBL_Project
	Title	Text (255)		Title of person in organization
	Role	Text (255)		Brief description of person's role in the organization
	IsContact	Boolean		Yes of the person is a contact for the organization.

Comments

REL_PersonToReference

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique Identifier	
	PersonID	Integer		Link to TBL_Person	
	ReferenceID	Integer		Link to TBL_Reference	
	IsAuthor	Boolean		Person is an author on the reference	
	isEditor	Boolean		Person is an editor on the reference	

REL_ProjectToReference

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Unique Identifier	
	ProjectID	Integer		Link to TBL_Project	
	OrganizationID	Integer		Link to TBL_Organization	
	Relationship	Text (255)		organization and project relate	

REL_ReferenceToReferenceProperty

Key	Field Name	Data Type	Values	Description	Comments
Y	ID	AutoNumber		Link to TBL_Reference	
	ReferenceID	Integer		Link to TBL_Reference	
	PropertyID	Integer		Link to LKU_Property	

REL_TaxonToLocation

Key	Field Name	Data Type	Values
Y	ID	AutoNumber	
	TaxonID	Integer (link to Grass)	
	LocationID	Integer	
	Native	Integer	
	Status	Text (255)	
	Regulations	Text (255)	
	Impact	Memo	
	Management	Memo	
	Comments	Memo	

Description	Comments
Unique Identifier	
Link to TBL_Taxon	
Link to LKU_Location	
0 if Alien, 1 if Native, 2 if Possibly Native	
Status of species in this location	
Regulation in this region	
Impact in this location	
Management in this location	
Additional information	

REL_TaxonToLocationToReference

Key	Field Name	Data Type	Values
Y	ID	AutoNumber	
	TaxonToLocationID	Integer (link to Grass)	
	ReferenceID	Integer	
	DateAccessed	Date/Time	

Description	Comments
Unique Identifier	
Link to REL_TaxonToLocation	
Link to TBL_Reference	
Date of Access for websites	

REL_TaxonToOrganism

Key	Field Name	Data Type	Values
Y	ID	AutoNumber	
	TaxonID	Integer	
	OrganismID	Integer	
	Interaction	Memo	

Description	Comments
Unique Identifier	
Link to TBL_Taxon	
Link to TBL_Organism	
Description of interaction between the Taxon and the Organism	

REL_TaxonToReference

Key	Field Name	Data Type	Values	Description
Y	ID	AutoNumber		Unique Identifier
	TaxonID	Integer		Link to TBL_Taxon
	ReferenceID	Integer		Link to TBL_Reference
	DateAccessed	Date/Time		Date of access of information
	DatabaseCitation	Boolean		Yes if used as a reference for taxon information in this DB.

Comments

REL_TaxonToTaxonProperty

Key	Field Name	Data Type	Key	Field Name
	Grass_ID		Y	ID
	Grass_ID			TaxonID
	GrassLoc_ID			PropertyID
				ReferenceID
	Ref_ID			DateAccessed
	Info_Source_ID	Integer (link to Reference)		
	Info_Source_Access_Date			

Data Type	Values	Description
AutoNumber		Unique Identifier
Integer		Link to TBL_Taxon
Integer		Link to LKU_Property
Integer		Link to TBL_Reference
Date/Time		Access date for websites

Comments