

# Project Baseline Data Dictionary

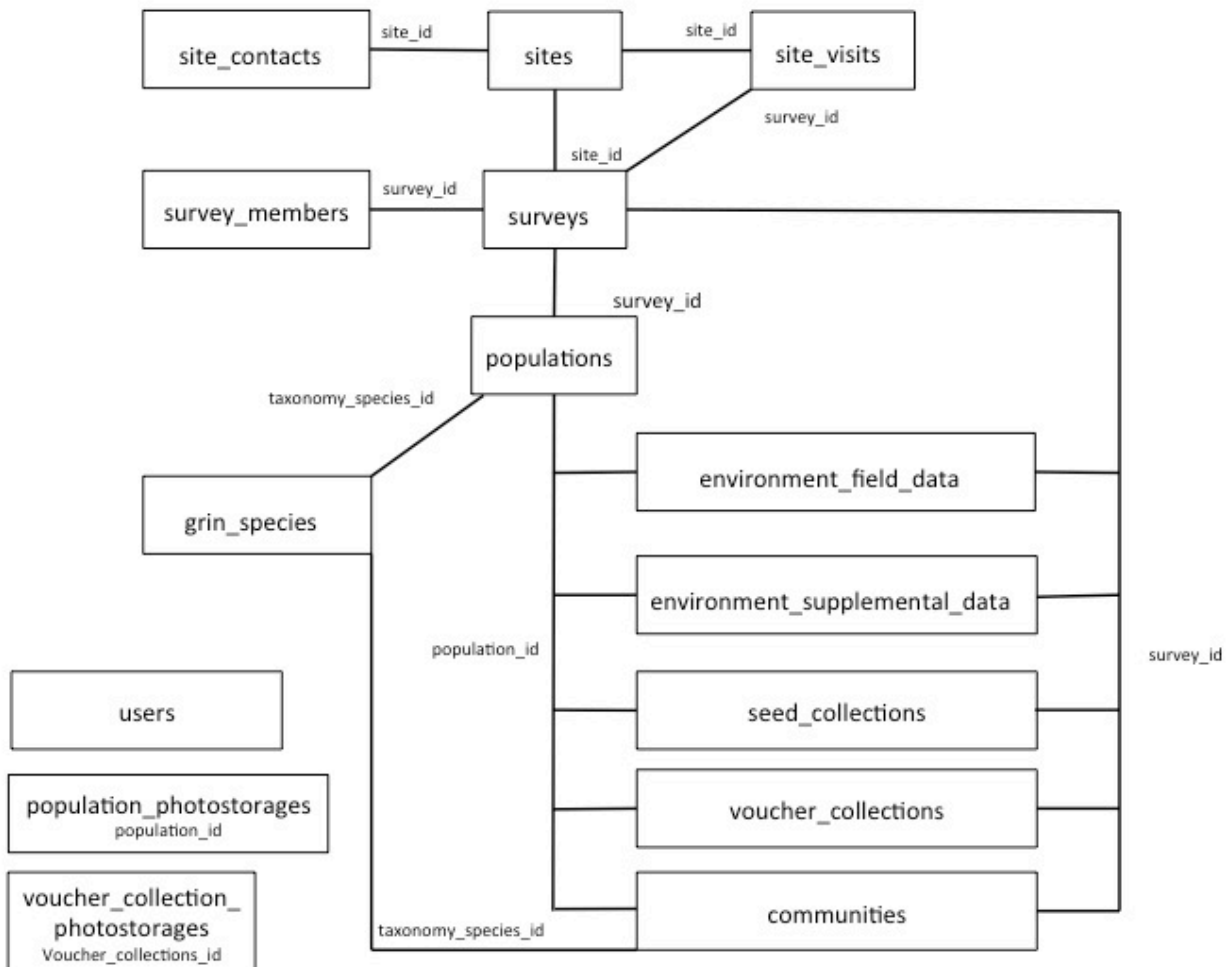
updated December 22, 2015

## I. The Project Baseline Database

All Project Baseline accession data and related environmental information are stored in the Project Baseline Database, currently hosted at the University of Minnesota Duluth. Users have the ability to query the database, download data from pre-assembled queries and download the full database tables at <http://baselineseedbank.org/search.php>.

## II. Database Structure

The diagram below shows the elements of the Project Baseline Database. Every box represents a distinct table. Foreign keys that relate tables to one another are specified next to the line indicating the relationship between two tables.



### III. Project Baseline database table field definitions.

**Table 1. sites:** Fields of data associated with site

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
site_code	varchar(50)		Site code
site_name	varchar(255)		Site name
site_latitude	varchar(25)		Site latitude (WGS84)
site_longitude	varchar(25)		Site longitude (WGS84)
network	varchar(255)		Network site belongs to (e.g. OBFS, NPS, TNC) or land ownership
address1	varchar(255)		Site physical address line 1
address2	varchar(255)		Site physical address line 2
address3	varchar(255)		Site physical address line 3
address4	varchar(255)		Site physical address line 4
city	varchar(255)		City
state	varchar(50)		State
zip_code	varchar(10)		Zip code
country	varchar(255)		Country
web_address	varchar(255)		URL for site website
comments	varchar(2000)		Comments related to the site (e.g. site access or directions)
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 2. site\_contacts:** Fields of data associated with site contacts

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
site_id	int(11)	Foreign	Relates <b>site_contact</b> record to <b>sites</b> primary key (id).
first_name	varchar(255)		Contact first name
last_name	varchar(255)		Contact last name
title	varchar(255)		Contact title
phone	varchar(50)		Contact primary phone number
email	varchar(50)		Contact email address
comments	varchar(500)		Comments regarding contact
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 3. surveys:** Fields of data associated with surveys (i.e. any action that resulted in data collection, including site visits, population/environmental data collection, seed collection, voucher collection)

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
site_id	int(11)	Foreign	Relates <b>surveys</b> record to <b>sites</b> primary key (id).
survey_date	date		Date of survey
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 4. survey\_members:** Fields of data associated with personnel involved in collecting data.

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
survey_id	int(11)	Foreign	Relateds <b>survey_members</b> record to <b>surveys</b> primary key (id).
first_name	varchar(255)		Field crew member/data collector first name
last_name	varchar(255)		Field crew member/data collector last name
middle_name	varchar(255)		Field crew member/data collector middle name
is_crew_leader	tinyint(4)		1 if crew member is the crew leader, 0 if not
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 5. site\_visits:** Fields of data associated with site visits

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
site_id	int(11)	Foreign	Relates <b>site_visits</b> record to <b>sites</b> primary key (id).
survey_id	int(11)	Foreign	Relateds <b>site_visits</b> record to <b>surveys</b> primary key (id).
comments	varchar(5000)		Site visit summary and comments.
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 6. populations:** Fields of data associated with populations

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
survey_id	int(11)	Foreign	Relates <b>populations</b> record to <b>surveys</b> primary key (id).
grin_species_id	int(11)	Foreign	Relates <b>populations</b> record to <b>grin_species</b> primary key (taxonomy_species_id).
population_code	varchar(50)		Population code
population_latitude	varchar(25)		Population latitude (WGS84)
population_longitude	varchar(25)		Population longitude (WGS84)
location_error	int(11)		GPS error (not currently used, default 0)
population_size	varchar(50)		Estimate of population abundance in general sampling (seed collection) area: "<100" individuals, "100-500", "500-1000", or ">1000"
population_extent	varchar(50)		Estimate of population extent in relation to general sampling area: "sampled area includes entire population", "population is 2-3 times the sampled area", or "population extends indefinitely"
cover_class	varchar(50)		Percent cover estimate of population over general sampling area: "50-100%", "25-50%", "5-25%", "<5%, numerous individuals", "<5% 2-20 individuals"
comments	varchar(500)		Comments regarding population
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 7. environment\_field\_data:** Fields of data associated with environment/habitat where population is located.

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
survey_id	int(11)	Foreign	Relates <b>environment_field_data</b> record to <b>surveys</b> primary key (id).
population_id	int(11)	Foreign	Relates <b>environment_field_data</b> record to <b>populations</b> primary key (id).
elevation	int(11)		Elevation in m where population is located.
habitat_description	varchar(500)		Description of habitat where population is located.
slope	varchar(50)		Average slope in degrees where population is located.
aspect	varchar(50)		Aspect: "N", "S", "E", "W", "NE", "NW", "SE", "SW", "LV" (if site is level)
comments	varchar(500)		Any other comments (not currently used – see habitat description)
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 8. environment\_supplemental\_data:** Fields of data associated with remotely collected environmental info.

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
population_id	int(11)	Foreign	Relates <b>environment_supplemental_data</b> record to <b>populations</b> PK (id).
epa_level2_ecoregion_code	varchar(255)		EPA Level II Ecoregion code for population area
epa_level2_ecoregion_name	varchar(500)		EPA Level II Ecoregion name for population area
epa_level3_ecoregion_code	varchar(255)		EPA Level III Ecoregion code for population area
epa_level3_ecoregion_name	varchar(500)		EPA Level III Ecoregion name for population area
prism_annual_precip	decimal(10,2)		PRISM annual precipitation (mm) normals for 1981-2010 acquired from 800m resolution raster data
prism_annual_max_temp	decimal(6,2)		PRISM annual maximum temperature (degrees C) normals for 1981-2010 acquired from 800m resolution raster data
prism_annual_min_temp	decimal(6,2)		PRISM annual minimum temperature (degrees C) normals for 1981-2010 acquired from 800m resolution raster data
prism_annual_mean_temp	decimal(6,2)		PRISM annual mean temperature (degrees C) normals for 1981-2010 acquired from 800m resolution raster data
soil_map_unit	varchar(50)		Soil map unit for population area from NCRS Web Soil Survey. (Not currently used)
soil_texture	varchar(255)		Soil texture for soil map unit. If more than one soil texture, range of soil textures is recorded here. (Not currently used)
depth_to_restriction	int(11)		Depth to restriction for soil map unit. If more than one, range of most to least extreme depths is recorded here. (Not currently used)
drainage_class	varchar(255)		Drainage class for soil map unit. If more than one, range of soil textures reported is recorded here. (Not currently used)
google_earth_url	varchar(500)		URL of Google map showing area of population sampled. (Not currently used)
download_date	date		Date EPA ecoregion and PRISM climate normals data acquired.
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.



created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 9. seed\_collections:** Fields of data associated with seed collections

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
survey_id	int(11)	Foreign	Relates <b>seed_collections</b> record to <b>surveys</b> primary key (id).
population_id	int(11)	Foreign	Relates <b>seed_collections</b> record to <b>populations</b> primary key (id).
maternal_number	varchar(50)		Number of maternal plants seed sampled from.
collection_procedure	varchar(500)		Description of seed collection procedure.
average_seeds_per_fruit	varchar(50)		Average number of seeds per fruit in a sample of approximately 5 fruits. <b>Note: this number is often a rough estimate and should be used with caution. It is also often unknown how many fruits were collected per plant.</b>
average filled seeds_percentage	varchar(50)		Percent of seeds filled in a sample of approximately 5 fruits.
archive_location	varchar(50)		Default "NCGRP"
seed_protocol	varchar(50)		Specifies seed collection protocol (e.g. Project Baseline or SOS). Not currently used.
phenology	varchar(50)		Developmental stage of most available fruits: "too green/moist to collect", "fruits slightly under-ripe", "fruits ripe", "intact and dry", "fruits already dehiscing"
comments	varchar(500)		Comments seed collection. Not currently used – see seed_protocol.
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 10. voucher\_collections:** Fields of data associated with voucher specimens

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
survey_id	int(11)	Foreign	Relates <b>voucher_collections</b> record to <b>surveys</b> primary key (id).
population_id	int(11)	Foreign	Relates <b>voucher_collections</b> record to <b>populations</b> primary key (id).
voucher_number	varchar(50)		Number of voucher collection from this population on this date: "1", "2", "3", etc.
county	varchar(255)		County voucher specimen collected from.
voucher_latitude	varchar(25)		Latitude for voucher specimen.
voucher_longitude	varchar(25)		Longitude for voucher specimen.
abundance	varchar(50)		Estimate of population abundance in general collection area.
elevation	int(11)		Elevation (m) of collection area.
habitat_desc	varchar(1000)		Description of habitat.
specimen_desc	varchar(1000)		Description of specimen.
locality	varchar(1000)		Textual description of collection location.
comments	varchar(500)		Comments regarding voucher specimen.
permit_num	varchar(255)		Collection permit number.
permit_issuer	varchar(255)		Collection permit issuing agency.
archive_location	varchar(255)		Bell Museum, Olga Lakela Herbarium, NYBG, UCSB
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 11. communities:** Fields of data associated with dominant species records collected with population habitat/environment data.

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
survey_id	int(11)	Foreign	Relates <b>communities</b> record to <b>surveys</b> primary key (id).
grin_species_id	int(11)	Foreign	Relates <b>communities</b> record to <b>grin_species</b> primary key (taxonomy_species_id).
population_id	int(11)	Foreign	Relates <b>communities</b> record to <b>populations</b> primary key (id).
confidence	tinyint(4)		Code indicating confidence in species identification: "0"=unknown, "1"=cf. genus, "2"=genus certain, "3"=cf.species, "4"=species complex, "5"=species certain, "6"=cf. var/subsp, "7"=variety certain.
cover_percent	varchar(50)		Percent cover estimate for species over general sampling area: "50-100%", "25-50%", "5-25%", "<5%, numerous individuals", "<5% 2-20 individuals"
comments	varchar(500)		Comments regarding dominant species.
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 12. grin\_species:** Fields of data from USDA GRIN database

Field	Type	Key	Description
taxonomy_species_id	int(11)	Primary	Unique identifier for each taxonomic name in the GRIN database.
name	varchar(255)		Full taxonomic name.
name_authority	varchar(255)		Naming authority for full taxonomic name.
current_taxonomy_species_id	varchar(50)		Relates to record for the currently accepted taxonomic name if this record is a synonym of that name.
genus_name	varchar(255)		Genus name.
taxonomy_genus_id	varchar(50)		Unique identifier for each genus.
species_name	varchar(50)		Species name.
is_specific_hybrid	tinyint(4)		1 if hybrid, 0 if not.
species_authority	varchar(255)		Species name authority.
is_subspecific_hybrid	tinyint(4)		1 if subspecific hybrid, 0 if not.
subspecies_name	varchar(255)		Subspecies name if relevant.
is_varietal_hybrid	tinyint(4)		1 if varietal hybrid, 0 if not.
variety_name	varchar(50)		Variety name.
is_subvarietal_hybrid	tinyint(4)		1 if subvarietal hybrid, 0 if not.
subvariety_name	varchar(50)		Subvariety name
subvariety_authority	varchar(255)		Subvariety naming authority.
verified_date	date		Date verified.
family_name	varchar(255)		Family name.
taxonomy_family_id	varchar(50)		Unique identifier for each family.
native_status	varchar(50)		Indicates where species is native to North America or introduced. This field is manually populated only for Project Baseline species.
longevity	varchar(50)		Species life span (i.e. annual, perennial, biennial). This field is manually populated only for Project Baseline species.
growth_habit	varchar(50)		Description of growth habit (i.e. graminoid, forb, tree). This field is manually populated only for Project Baseline species.
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more

			information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 13. population\_photostorages:** Fields of data associated with photos taken of populations.

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
population_id	int(11)	Foreign	Relates <b>photostorages</b> record to <b>populations</b> record.
relative_path_file_name	varchar(500)		Path to photo's filename on server.
file_size_in_bytes	int(11)		Photo file size.
comments	varchar(500)		Comments related to the photo file.
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 14. voucher\_collection\_photostorages:** Fields of data associated with photos taken of voucher specimens.

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
voucher_collection_id	int(11)	Foreign	Relates <b>photostorages</b> record to <b>voucher_collections</b> record.
relative_path_file_name	varchar(500)		Path to photo's filename on server.
file_size_in_bytes	int(11)		Photo file size.
comments	varchar(500)		Comments related to the photo file.
is_deleted	tinyint(4)		1 if site record is deleted, 0 if not (default)
created_by	varchar(50)		User name of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		User name of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified

**Table 15. users:** Fields of data associated with data entry personnel.

Field	Type	Key	Description
id	int(11)	Primary	Unique record identifier; autoincrements.
username	varchar(50)		Unique username identifying data entry operator (x500 id from UMD).
emplID	varchar(50)		Employee ID (not currently used).
first_name	varchar(255)		First name of data entry operator.
middle_name	varchar(255)		Last name of data entry operator.
last_name	varchar(255)		Last name of data entry operator.
is_activated	tinyint(4)		1 if activated, 0 if not (not currently used)
created_by	varchar(50)		Username of data entry personnel. See <b>users</b> table for more information.
created_date	datetime		Date and time record was created in database.
last_modified_by	varchar(50)		Username of data entry personnel to most recently modify record.
last_modified_date	datetime		Date and time record was last modified