

Data User Guide: Downloaded Data Files (Metadata*)

*Metadata is data that describes other data.

Once you've downloaded your Budburst data and opened your CSV/Excel file, you'll see the file is organized into many columns (in the example below, letters A-R represent a column). This document uses a series of tables to describe the data found in each column.

FileHomeInsertPage LayoutFormulasDataReviewViewAutomateHelp

A1

report_id

CommentsShare

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	report_id	report_ty	site_spec	species_ic	common_	family	genus	species	infra_ran	infra_epit	sec_infra	sec_infra_cultivar	plant_gro	official_b	location_i	latitude	longitude	
		phenolog			common dandelio	Asteracea	Taraxacu										38.09410	88.53500
2	491 y		364	66 n		e	m	officinale						WH	TRUE	956 00	00000000	00000000
		phenolog				Nymphae	Nymphae										40.74780	89.64710
3	698 y		33212	173	Water lily	aceae	a	odorata						WH	TRUE	1083 00	00000000	00000000
		phenolog			common												42.49100	88.06330
4	1069 y		716	70	lilac	Oleaceae	Syringa	vulgaris						DTS	TRUE	1240 00	00000000	00000000

Overview of Tables

The exact columns appearing in your downloaded file will depend on which observation type(s) you selected when searching the database for your dataset (phenology, pollinators, or milkweed & monarch).

- [Table 1: Columns found in all downloaded Budburst data files.](#) [1](#)
- [Table 2: Columns found only in downloaded files of phenology observations.](#) [4](#)
- [Table 3: Columns found only in downloaded files of pollinator observations.](#) [5](#)
- [Table 4: Columns found only in downloaded files of milkweed & monarch observations.](#) [7](#)

(See [Budburst Observation Types](#) for more on observation types.)

Each table row includes:

- (1) The name of a column found in the downloaded csv/excel file.
- (2) A description of the data found in that column.
- (3) An example of data found in that column. The order of the columns listed in the tables reflects the order of the columns appearing in the downloaded file.

Table Description

Table 1: Columns found in all downloaded Budburst data files.

The columns in this table will appear in downloads of all observation types (phenology, pollinators, and milkweed & monarch). The example data in this table is from an observation of a common milkweed plant in Ohio.

Some columns contain user-submitted information on the plant being observed, including species and location. Others are added by the Budburst system and help describe or manage the data collected by the user ('system fields'). Note the term "id" or "ID" used throughout is short for 'identifier', which the system uses to reference a particular record in the data.

Column Name	Description	Example
report_id	<i>System field.</i> Each submitted Budburst observation form is given a unique report id. Rows of data with the same report_id are associated with the same observation. <i>Note: This id can be used to look up the original submission associated with a row of data in the Budburst database. Simply type into your web browser: budburst.org/data/###, ### being the report id. (e.g. budburst.org/data/8392)</i>	8392
user_id	<i>System field.</i> Everyone who signs up for a Budburst account is assigned a random user identification number (user ID). Therefore, the user ID column indicates which Budburst user submitted the data. If multiple rows of data have the same user id number, these data were all submitted by the same Budburst user.	2472
report_type	Indicates the type of observation that was made: phenology, pollinators, or milkweed & monarch.	phenology
site_species_id	<i>System field.</i> Each observation submitted by a user is assigned a 'site_species_id' based on the combination of the species and location (GPS coordinates) of the observed plant. Any subsequent observation made by the user on the same plant species in the same location is given the same 'site_species_id'. This number can be thought of as the identification number for an individual plant, as rows of data with the same site_species_id are associated with the same plant (Observations made on a nicknamed plant and observations associated with the same 'plant card' on the app will always have the same site_species_id). <i>Note that observations on the same plant <u>can</u> be given different site_species_ids. If a user gives slightly different GPS locations for two observations of the same plant, the system will treat the observations as coming from two different plants. (This problem is avoided if the user is adding</i>	32538

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	<i>observations of the same plant under the same nickname or plant card.).</i> <i>Observations submitted by different users will <u>not</u> have the same site_species_ID, even if they are observing the same plant.</i>	
species_id	<i>System field.</i> The identification number of the plant species observed. A unique species identification number is assigned to each species observed by Budburst users. All observations on the same species will have the same species_id (e.g. all observations made on common milkweed have '176' in the species_id column)	176
common_name	The common name of the plant species observed	Common milkweed
family	The taxonomic family to which the observed plant species belongs. (Learn more about family and other biological classifications here.)	Apocynaceae
genus	The taxonomic genus to which the observed plant species belongs (biological classification)	Asclepias
species	The taxonomic species of the plant observed (biological classification) <i>The taxonomic genus + species = the scientific name for the plant species observed. E.g. The scientific name for common milkweed is Asclepias syriaca.)</i>	syriaca
infra_rank, infra_epithet, sec_infra_rank, sec_infra_epithet	These columns are blank and not of interest, as they are associated with an inactive Budburst project.	
cultivar	Cultivar name of the observed plant <i>if</i> it is a cultivar (cultivated variety) recognized by the Budburst database. Only the names of cultivars that were studied as part of our Nativars research project are recognized and will appear in this column. Therefore, this column is <u>usually only of interest to Nativar project participants.</u>	
plant_group	Abbreviation for the Budburst plant group to which the observed plant species belongs. Options are: DTS (deciduous trees and shrubs), WH (wildflowers and herbs), ETS (broadleaf evergreens), C (conifers), G (grasses).	WH
official_budburst _species	<i>System field.</i> Indicates whether the observed plant species is an official Budburst species (TRUE/FALSE). (See here for more information on official Budburst species)	TRUE
location_id	<i>System field.</i> When a user submits a location for their plant, a random location_id is assigned. If the user makes another observation in that exact location, the same location_ID will	1396

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	be assigned. Observations from the same user (same user ID) with the same location ID have the same GPS coordinates.	
latitude	GPS coordinate for the latitudinal location of the plant being observed.	39.671500000 000000
longitude	GPS coordinate for the longitudinal location of the plant being observed.	-82.54120000 000000
locality	City in which the plant was observed.	Lancaster
administrative_area_level_1	U.S. state (abbreviated) in which the plant was observed. <i>Alternative locational information is available for some other countries. e.g. Canadian province.</i>	OH
postal_code	U.S. postal or zip code (if applicable)	43130
administrative_area_level_2	U.S. county. <i>Alternative locational information is available for some other countries.</i>	Fairfield Country
country	Abbreviated country	US
observation_date	The date the observation was made (month/day/year)	06/19/2009
notes	This column includes any comments the observer made about their observation. They might give more detail about their observation or offer additional information about the plant or its conditions. (e.g., "The weather has been unseasonably cool recently.") <i>Note that this section will say 'Legacy report' for older observations (Those submitted before March/April 2011). That simply means the report was made before Budburst was hosted at the Chicago Botanic Garden (It was originally hosted at NEON, the National Ecological Observatory Network).</i>	Legacy report.
observation_id	<i>System field.</i> Each separate row of data in the downloaded data file is assigned a unique observation identification number.	8322

Table 2: Columns found only in downloaded files of phenology observations.

The 'example' column shows data from a user selecting a leaf phenophase ('first shoot') for a plant in the wildflower and herbs group (e.g. common milkweed).

Column Name	Description	Example
phenophase_id	This column combines information found in the next two columns (described below) in an abbreviated form. It contains information about the plant part being observed (e.g. leaves, abbreviated to LV) and the phenophase that was selected (e.g. first shoot).	LV-FIRSTSHO OT
phenophases_plant_structure	The plant part that was observed. More specifically, the name of the 'phenophase wheel' that was filled out on the observation form. The options for this column depend on the	Leaves

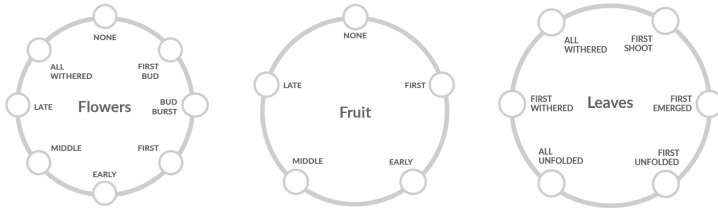
	plant group. For plants in the Wildflowers and Herbs group, the options are 'leaves', 'flowers', or 'fruit'. <i>Phenophase wheels for the wildflower and herbs group:</i> 	
phenophases_title	The phenophase selected by the observer for the designated plant part/phenophase wheel.	First shoot

Table 3: Columns found only in downloaded files of pollinator observations.

The 'example' column shows data from a user counting pollinator visits to a plant (e.g. the common milkweed) using the basic protocol.* The monitored plant was in the late flowering stage (most flowers wilted) and had 20 open flowers. The user saw a total of 15 pollinators visiting the plant, 13 of which they identified as 'bees & other' and 2 of which they could not identify. (

**Note: Some columns will be left blank in the downloaded file, depending on which protocol (basic, advanced, or expert) was used. The basic protocol asks the user to identify visiting pollinators into 1 of 3 pollinator groups (butterflies & moths, birds, bees & other). The advanced protocol uses 7 groups (butterflies & moths, birds, small bees & flies, honey bees, bumble bees, large bees & wasps, beetles, bats). The expert protocol uses 13 groups (butterflies, moths, birds, bees general, metallic green bees, flies, honey bees, bumble bees, wasps, carpenter bees, beetles, ants, bats). All protocols allow the user to select 'not sure' if they are unable to identify a pollinator. (See [here](#) for more information on various pollinator groups).*

Column Name	Description	Example
pollinators_time_start	Time of day (hh: mm am/pm) the observation began	12:00 PM
pollinators_time_end	Time of day (hh: mm am/pm) the observation ended	12:10 PM
pollinators_temperature_fahrenheit	Temperature (degrees Fahrenheit) during the observation	70
pollinators_cloud_cover_id	Approximate cloud cover during the observation (cloudy, mostly cloudy, mostly sunny, or sunny)	Mostly sunny
pollinators_flowering_stage_id	Flowering stage of the plant being observed. Options are: - Early: Only a few flowers have emerged (less than 5%) - Middle: The majority of flowers have emerged (more than 60%) - Late: Most flowers have wilted or fallen off (over 95%)	Most flowers have wilted or fallen off (over 95%)
pollinators_number_open_flowers	Number of open flowers or flower heads on the plant	20

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pollinators_plant_height	Height of the plant in centimeters <i>This is an optional field in data submission forms so might be blank.</i>	
pollinators_ants	Number of visits made to the plant by ants (expert protocol only)	
pollinators_bats	Number of visits made to the plant by bats (advanced and expert protocols only)	
pollinators_bees_general	Number of visits made to the plant by pollinators in the 'bees general' group (i.e. bees not falling into the more specific bee categories listed like honey bees and metallic green bees) (expert protocol only)	
pollinators_bees_other	Number of visits made to the plant by pollinators in the 'bees and other' group (basic protocol only)	13
pollinators_beetles	Number of visits made to the plant by beetles (advanced and expert protocols)	
pollinators_birds	Number of visits made to the plant by birds (basic, advanced, and expert protocols)	0
pollinators_bumble_bees	Number of visits made to the plant by bumblebees (advanced and expert protocols only)	
pollinators_butterflies	Number of visits made to the plant by butterflies (expert protocol only)	
pollinators_butterflies_moths	Number of visits made to the plant by pollinators butterflies and moths (basic and advanced protocols only)	0
pollinators_carpenter_bees	Number of visits made to the plant by carpenter bees (expert protocol only)	
pollinators_flies	Number of visits made to the plant by flies (expert protocol only)	
pollinators_honey_bees	Number of visits made to the plant by honey bees (advanced and expert protocols only)	
pollinators_large_bees_wasps	Number of visits made to the plant by large bees and wasps (advanced protocol only)	
pollinators_metallic_green_bees	Number of visits made to the plant by metallic green bees (expert protocol only)	
pollinators_moths	Number of visits made to the plant by moths (expert protocol only)	
pollinators_not_sure	Number of visits made to the plant by unidentified pollinators (basic, advanced, and expert protocols)	2
pollinators_small_bees_flies	Number of visits made to the plant by small bees and flies (advanced protocol only)	
pollinators_wasps	Number of visits made to the plant by wasps (expert protocol only)	

Table 4: Columns found only in downloaded files of milkweed & monarch observations.

The 'example' column shows data from a user monitoring one milkweed plant in a larger milkweed patch for the presence of monarch caterpillars and eggs. The plant they monitored was in the early flowering stage and had 2 flower clusters with an open flower(s). There were no monarch eggs or caterpillars on

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the plant. The only other insects/spiders present were milkweed aphids. The user gathered their data using the basic protocol*.

**Note: Some columns will be left blank in the downloaded file, depending on which protocol (basic or advanced) was used. Both protocols ask the user to count the number of monarch caterpillars in different instar (growth) stages on the plant. There are five instar stages for monarch caterpillars. The basic protocol asks the user to identify monarch caterpillars into 1 of 2 groups based on their instar stage (instar stage 1 or instar stages 2-5). The advanced protocol uses 5 groups (instar stage 1, 2, 3, 4, or 5)*

Column Name	Description	Example
monarchs_patch_name	A user-created nickname for the milkweed patch they are monitoring. It can be used to help determine whether observations are associated with the same milkweed patch. <i>This is an optional field and is often left blank.</i>	Island 1
monarchs_monitoring_all_plants_in_a_patch	Indicates whether the user monitored all the plants in the milkweed patch during their observation. The column will have a 1 if all plants were monitored and a 0 if not all plants were monitored.	0
monarchs_number_of_plants_in_a_patch	The approximate number of milkweed plants in the patch (Options are 1-10, 11-25, 26-50, 51-100, or >100)	11-25
monarchs_no_insects_present	Indicates whether insects/spiders (other than monarch caterpillars) were present on the plant (FALSE = Other insects were present, TRUE = Other insects/spiders were NOT present) <i>Note: If this column says, TRUE, this means the user saw no other insects/spiders, so the next 7 columns (below) will all say 'FALSE'.</i>	FALSE
monarchs_ants_present	Indicates whether ants were present on the plant (FALSE = no ants were present)	FALSE
monarchs_milkweed_aphids_present	Indicates whether milkweed aphids were present on the plant (FALSE = no milkweed aphids present)	TRUE
monarchs_beetles_present	Indicates whether Japanese beetles were present on the plant (FALSE = no Japanese beetles present)	FALSE
monarchs_milkweed_beetles_present	Indicates whether milkweed beetles were present on the plant (FALSE = no milkweed beetles present)	FALSE
monarchs_milkweed_bugs_present	Indicates whether milkweed bugs were present on the plant (FALSE = no milkweed bugs present)	FALSE
Monarchs_other_insect_present	Indicates whether any other insects were present (FALSE = no other insects were present)	FALSE
Monarchs_spiders_present	Indicates whether spiders were present on the plant (FALSE = no spiders present)	FALSE
Monarchs_stem_plant_flowering_stage	The flowering stage of the plant being monitored. Choices are: none (no flowers blooming), early (only a few flowers have emerged, < 5%), middle (the majority of flowers have emerged, > 60%), late (most flowers	Early

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	have wilted or fallen off, > 95%), non-flowering/clipped (plant was cut back to prevent flowering)	
Monarchs_stem _number_flower _clusters	Number of flower clusters containing at least one open flower on the plant	2
Monarchs_stem _number_eggs	Number of monarch caterpillar eggs on the plant	0
Monarchs_stem _number_instar_1	Number of monarch caterpillars in instar stage 1 on the plant	0
Monarchs_stem _number_instar_2_5	Number of caterpillars in instar stages 2-5 (basic protocol only)	0
Monarchs_stem _number_instar_2	Number of caterpillars in instar stage 2 (advanced protocol only)	
Monarchs_stem _number_instar_3	Number of caterpillars in instar stage 3 (advanced protocol only)	
Monarchs_stem _number_instar_4	Number of caterpillars in instar stage 4 (advanced protocol only)	
Monarchs_stem _number_instar_5	Number of caterpillars in instar stage 5 (advanced protocol only)	