# GLOBE_secchi_transparency_brackish
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GENERAL INFORMATION

GLOBE Secchi Disk Transparency - Brackish Water

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Date of data collection: April 19, 2002 to March 19, 2025

Geographic location of data collection: global

SHARING/ACCESS INFORMATION

Links to other publicly accessible locations of the data:
https://vis.globe.gov/GLOBE/
http://datasearch.globe.gov/
http://api.globe.gov/search/swagger-ui.html

DATA & FILE OVERVIEW

File Name:
GLOBE_secchi_transparency_brackish.csv

Description: This is a curated dataset of NASA GLOBE observations of brackish water transparency using a secchi disk. Depth observations are made by lowering a secchi disk into the water until it can no longer be seen, or reaches the bottom. After the disk can no longer be seen, it is lowered a further and then raised until it is visible again. The average of these depths is the final transparency depth (transparency_disk_image_disappearance_m). The GLOBE Secchi Disk protocol at the time of publishing this dataset also required that observers record the distance of the observer above the water surface. This value is included in the total depth to disappearance. Since this is not the method which other secchi disk datasets follow, some confusion about the inclusion of the distance above water value led to inconsistencies in the

dataset. As such, we have published this curated dataset which has been cleaned using the methods described below.

METHODOLOGICAL INFORMATION

Description of methods used for collection/generation of data: Data was obtained from the NASA GLOBE API on September 29, 2025 (3318 brackish water measurements). Due to errors in the data entry process, some measurements with issues were removed from this dataset. Some measurements have multiple issues. All data is available through globe.gov.

Cleaning steps taken are as follows:
1. Removed measurements will null depths (n = 4)
2. Removed all measurements with negative depth values. (n = 187)
3. Removed data with distance above water greater than 5m. (n = 552)
4. Removed data with no location info. (n = 0)
5. Removed measurements with distance above water equal to disappearance or reappearance depths (data entry error).  (n = 51)

Note: There are 7 measurements with a difference between disappearance and reappearance depths greater than 2 meters. Use discretion when working with these measurements.

SUMMARY STATISTICS

Each unique transparency ID number represents a single observation. Each observation can have up to three measurements associated with it.

Number of observations with 1 measurement: 922
Number of observations with 2 measurements:  14
Number of observations with 3 measurements: 514

VARIABLES

Number of variables: 55
Number of cases/rows: 2492

Variable List:

latitude
longitude
transparency_id
site_id
userid
usertype
organizationid

measured_at [MM/DD/YYYY  00:00:00 PM]
    Date and time of the observation.
transparency_disk_image_disappearance_m [m]
    calculated average disappearance depth
    ((disappearance - distance_to_surface) + (reappearance - distance_to_surface))/2
transparency_disk_does_not_disappear [TRUE/FALSE]
    True if disk did not disappear. False if disk did disappear.
sample_number
    Number 1 to 3 representing the sample number associated with each transparency_ID.
sample_distance_to_surface_m [m]
    Distance from the observer to the surface of the water.
sample_transparency_disk_image_disappearance_m [m]
    Distance from the observer to disk when it disappeared. This includes the height
recorded in sample_distance_to_surface_m.
sample_transparency_disk_image_reappearance_m [m]
    Distance from the observer to disk when it reappeared. This includes the height
recorded in sample_distance_to_surface_m.
sample_transparency_disk_does_not_disappear [TRUE/FALSE]
    True if disk did not disappear. False if disk did disappear. Same as
transparency_disk_does_not_disappear.
comments
water_body_state
    Normal; Frozen; Dry; Flooded; Unreachable
created_at [MM/DD/YYYY  00:00:00 PM]
    Date and time of the site creation.
updated_at [MM/DD/YYYY  00:00:00 PM]
    Date and time that the site information was last updated.
site_activated_at [MM/DD/YYYY  00:00:00 PM]
    Date and time that the site was activated.
site_version
site_version_date
water_body_name
    User input. Name of water body.
water_body_type
    Salt Water; Fresh Water; Brackish; Unknown
water_body_source
    Pond; Lake; Reservoir; Bay; Ditch; Ocean; Estuary; River; Stream; Marsh/Swamp;
Agriculture; Puddles, Animal or Vehicle Tracks; Other
water_body_bank_to_bank_distance_m [m]
water_body_area_sq_km [KM^2]
water_body_depth_m [m]
water_sample_location
    Outlet; Bank; Bridge; Boat; Inlet; Pier
see_bottom_flag [TRUE/FALSE]

True if observer could see the bottom of the water body

bank_material_is_soil [TRUE/FALSE]
bank_material_is_rock [TRUE/FALSE]
bank_material_is_concrete [TRUE/FALSE]
bank_material_is_vegetated_bank [TRUE/FALSE]
bedrock_type_is_granite [TRUE/FALSE]
bedrock_type_is_limestone [TRUE/FALSE]
bedrock_type_is_volcanic [TRUE/FALSE]
bedrock_type_is_mixed_sediments [TRUE/FALSE]
bedrock_type_is_unknown [TRUE/FALSE]
freshwater_habitat_has_rocky_sustrate [TRUE/FALSE]
freshwater_habitat_has_vegitated_banks [TRUE/FALSE]
freshwater_habitat_has_mud_substrate [TRUE/FALSE]
freshwater_habitat_has_sand_substrate [TRUE/FALSE]
freshwater_habitat_has_submerged_vegetation [TRUE/FALSE]
freshwater_habitat_has_logs [TRUE/FALSE]
salt_habitat_has_rocky_shore [TRUE/FALSE]
salt_habitat_has_sandy_shore [TRUE/FALSE]
salt_habitat_has_mud_flats_or_estuary [TRUE/FALSE]
site_comments
old_schoolid
old_siteid
old_versiondate
site_created_at
site_updated_at
depth_difference

Calculated difference between sample disappearance and reappearance depth [m]