

## Data Set Citation

When using this data, please cite the data package

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***Nearshore Fishes Abundance and Distribution Data, California Collaborative Fisheries Research Program (CCFRP)***

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## General Information

Title:	<b>Nearshore Fishes Abundance and Distribution Data, California Collaborative Fisheries Research Program (CCFRP)</b>
Identifier:	autogen.2022051908393311924.1
Abstract:	<p>Data in this collection include the species and quantity of nearshore fishes caught during drifts conducted in and near California MPAs between 2007 and 2021. The California Collaborative Fisheries Research Program (CCFRP) initially surveyed four protected areas in central California annually; the program expanded to 15 protected and 16 reference areas statewide in 2017. Data were collected within 500x500 m grid cells positioned inside protected and reference areas. Each fish caught was identified to the species, otherwise, fish were identified to the lowest possible taxonomic level. The number of hours each angler spent fishing during each drift, and the number of fish caught were also recorded, enabling the calculation of biomass, Catch-Per-Unit-Effort (CPUE), and Biomass-Per-Unit-Effort (BPUE).</p> <p>This submission includes two derived data tables, CCFRP_derived_length_table.csv and CCFRP_derived_effort_table.csv, containing species caught during each survey, their lengths, the total number of angler hours required to catch them, CPUE and BPUE. The metadata file from the raw data files is also included (CCFRP_derived_data_table_code_R.pdf). Raw data files from the CCFRP database are available on the CCFRP GitHub Repository (<a href="https://github.com/ccfrp/DataONE-Derived-Data-Table-Code">https://github.com/ccfrp/DataONE-Derived-Data-Table-Code</a>) along with the code used to generate the derived data. Boundaries for the MPAs referenced in this dataset and information on related long-term California MPA monitoring efforts can be found at <a href="https://opc.dataone.org/view/doi:10.25494/P6V884">https://opc.dataone.org/view/doi:10.25494/P6V884</a>.</p> <p>The CCFRP aims to develop rigorous survey methods and collect baseline data on the species, size composition and relative abundance of fishes in shallow rocky habitats inside proposed Marine Protected Areas (MPAs) and nearby fished reference areas. These data underpin management decisions and engages the recreational fishing community to help evaluate changes in the species, size composition and relative abundance of fishes after MPA establishment.</p>
Keywords:	<p>GCMD:</p> <ul style="list-style-type: none"> <li>◦ EARTH SCIENCE &gt; BIOLOGICAL CLASSIFICATION &gt; ANIMALS/VERTEBRATES &gt; FISH</li> <li>◦ EARTH SCIENCE &gt; OCEANS</li> <li>◦ EARTH SCIENCE &gt; BIOSPHERE &gt; ECOSYSTEMS &gt; MARINE ECOSYSTEMS &gt; COASTAL &gt; KELP FOREST</li> <li>◦ EARTH SCIENCE &gt; OCEANS &gt; MARINE ENVIRONMENT MONITORING</li> <li>◦ EARTH SCIENCE &gt; OCEANS &gt; AQUATIC SCIENCES &gt; FISHERIES</li> <li>◦ EARTH SCIENCE SERVICES &gt; ENVIRONMENTAL ADVISORIES &gt; MARINE ADVISORIES &gt; MARINE BIOLOGY</li> </ul> <p>California Ocean Protection Council:</p> <ul style="list-style-type: none"> <li>◦ Biological data</li> <li>◦ Kelp forest/shallow subtidal</li> <li>◦ Baseline MPA monitoring</li> <li>◦ Long-term MPA monitoring</li> <li>◦ Marine Protected Area (MPA)</li> <li>◦ MPA research &amp; monitoring</li> <li>◦ Hook and line</li> <li>◦ North Coast</li> <li>◦ Central Coast</li> <li>◦ South Coast</li> </ul>

- California Collaborative Fisheries Research Program (CCFRP)
- Fish

Publication Date: 2022

Data Table, Image, and Other Data Details:

Metadata download

Other Entity:

Name:

CCFRP\_species\_table.csv

Data Object Type:

application/vnd.ms-excel

Description:

Table containing the species code, common name, scientific name, major taxonomic ranks, WoRMS apialID, and description of CCFRP surveys.

Attribute(s) Info:

Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Associated
Species_Code	Species code	Three letter code used to identify organisms from a particular taxon		nominal	Def Any text			
Common_Name	Common name	The common name (vernacular name) of a particular taxon		nominal	Def Any text			
Scientific_Name	Scientific name	The scientific name of a particular taxon		nominal	Def Any text			
Kingdom	Kingdom	The Kingdom for a particular taxon		nominal	Def Any text			
Phylum	Phylum	The Phylum for a particular taxon		nominal	Def Any text			
Class	Class	The Class for a particular taxon		nominal	Def Any text			
Order	Order	The Order for a particular taxon		nominal	Def Any text			
Family	Family	The Family for a particular taxon		nominal	Def Any text			
Genus	Genus	The Genus for a particular taxon		nominal	Def Any text			
Species	Species	The Species for a particular taxon		nominal	Def Any text			
taxonomic_source	Taxonomic source	The taxonomic authority used to verify the scientific name of a particular taxon, in this case www.marinespecies.org		nominal	Def Any text			
taxonomic_id	Taxonomic ID	The identification number assigned by the taxonomic authority; in this case, the apialID assigned by the World Register of Marine Species (www.marinespecies.org)		ratio	Unit dimensionless Type real			
species_definition	Species definition	The scientific name of a particular taxon, or, if the scientific name is unclear or unavailable, a description of the taxon		nominal	Def Any text			

Other Entity:

Name:

CCFRP\_location\_table.csv

Data Object Type:

application/vnd.ms-excel

Description:

Table containing the CCFRP monitoring group, survey area name, grid cell ID, MPA status and coordinates for all locations sam

surveys. Whether or not each location was sampled during a particular year is also included.								
Attribute(s) Info:								
Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Accu
LTM_project_short_code	Long-term monitoring project short code	The code assigned to a long-term monitoring project, in this case, LTM_CCFRP		nominal	Def Any text			
Monitoring_Group	Monitoring group	Which of the monitoring groups affiliated with CCFRP conducts surveys at a particular location		nominal	Def Any text			
Area	Area	The name of the area containing the location		nominal	Def Any text			
MPA_names	MPA names	If the area is located within a California Marine Protected Area (MPA), the name of that MPA		nominal	Def Any text			
CA_MPA_name_short	California Marine Protected Area name short	If the area is located within a California Marine Protected Area (MPA), a shortened version of the name of that MPA		nominal	Def Any text			
Grid_Cell_ID	Grid cell ID	A short code identifying the grid cell within an area where the survey took place; the combination of area and grid cell ID uniquely specifies a location or survey site.		nominal	Def Any text			
Area_Code	Area code	A two letter code identifying each area		nominal	Def Any text			
MPA_Status	Marine Protected Area Status	MPA if the location is within a Marine Protected Area; REF if the location is within a fished reference site		nominal	Domain Info			
lat_center_point_dd	Latitude of the center point in decimal degrees	The latitude (WGS84) in decimal degrees of the center point of the location		ratio	Unit dimensionless Type real			
lon_center_point_dd	Longitude of the center point in decimal degrees	The longitude (WGS84) in decimal degrees of the center point of the location		ratio	Unit dimensionless Type real			
lat_1_dd	Latitude 1 in decimal degrees	The latitude of the northwest corner of the grid cell in decimal degrees		ratio	Unit dimensionless Type real			
lon_1_dd	Longitude 1 in decimal degrees	The longitude of the northwest corner of the grid cell in decimal degrees		ratio	Unit dimensionless Type real			
lat_2_dd	Latitude 2 in decimal degrees	The latitude of the northeast corner of the grid cell in decimal degrees		ratio	Unit dimensionless Type real			
lon_2_dd	Longitude 2 in decimal degrees	The longitude of the northeast corner of the grid cell in decimal degrees		ratio	Unit dimensionless Type real			
lat_3_dd	Latitude 3 in decimal degrees	The latitude of the southwest corner of the grid cell in decimal degrees		ratio	Unit dimensionless Type real			
lon_3_dd	Longitude 3 in decimal degrees	The longitude of the southwest corner of the grid cell in decimal degrees		ratio	Unit dimensionless Type real			
lat_4_dd	Latitude 4 in decimal degrees	The latitude of the southeast corner of the grid cell in decimal degrees		ratio	Unit dimensionless Type real			

lon_4_dd	Longitude 4 in decimal degrees	The longitude of the southeast corner of the grid cell in decimal degrees		ratio	<b>Unit</b> dimensionless <b>Type</b> real			
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Other Entity:

Name:	CCFRP_derived_length_table.csv
Data Object Type:	application/vnd.ms-excel
Description:	Table containing the length of each fish caught during CCFRP surveys. The location (area and grid cell) and survey date when e also included.

Attribute(s) Info:

Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Assoc
LTM_project_short_code	Long-term monitoring project short code	The code assigned to a long-term monitoring project, in this case, LTM_CCFRP		nominal	<b>Def</b> Any text			
Monitoring_Group	Monitoring group	Which of the monitoring groups affiliated with CCFRP conducted the survey		nominal	<b>Def</b> Any text			
CA_MPA_name_short	California Marine Protected Area name short	If the survey was conducted within a California Marine Protected Area (MPA), a shortened version of the name of that MPA		nominal	<b>Def</b> Any text			
Area	Area	The name of the area where the survey was conducted		nominal	<b>Def</b> Any text			
Site	Site	MPA if the survey was conducted within a Marine Protected Area; REF if the survey was conducted within a fished reference site		nominal	<a href="#">Domain Info</a>			
Date	Date	Date (YYYY-MM-DD) when the survey was conducted		dateTime				
Year	Year	The year when the survey was conducted		ratio	<b>Unit</b> dimensionless <b>Type</b> real			
Month	Month	The month when the survey was conducted		ratio	<b>Unit</b> dimensionless <b>Type</b> real			
Day	Day	The day of the month when the survey was conducted		ratio	<b>Unit</b> dimensionless <b>Type</b> real			
ID_Cell_per_Trip	ID cell per trip	A unique identifier for each survey, consisting of the two-letter area code (from the location table), M if the area was in an MPA or R otherwise, the date the survey was conducted (MMDDYY) and the grid cell number.		nominal	<b>Def</b> Any text			
Grid_Cell_ID	Grid cell ID	The grid cell identification code, which consists of the two-letter area code (from the location table) and the grid cell number.		nominal	<b>Def</b> Any text			
Common_Name	Common name	The common name of each fish caught during a given survey; these common names correspond to those provided in the species table.		nominal	<b>Def</b> Any text			
Length_cm	Length in centimeters	The length in centimeters of each fish caught during a given survey, used to calculate Biomass-Per-Unit-Effort in CCFRP_derived_effort_table.		ratio	<b>Unit</b> centimeter <b>Type</b> real			

Other Entity:

Name:	CCFRP_derived_data_table_code_R.pdf
Data Object Type:	application/pdf
Description:	R code used to obtain CCFRP_derived_effort_table and CCFRP_derived_length_table from raw data. Raw data are hosted on the University of California, San Diego's Digital Commons: <a href="http://islandora.mlml.calstate.edu/islandora/object/islandora%3A10865">http://islandora.mlml.calstate.edu/islandora/object/islandora%3A10865</a>

Other Entity:

Name:	CCFRP_derived_effort_table.csv
Data Object Type:	application/vnd.ms-excel
Description:	Table containing the number of fish of each taxa caught during CCFRP surveys, and the number of angler-hours invested to catch them. Catch-Per-Unit-Effort and Biomass-Per-Unit-Effort have been calculated. The location (area and grid cell) and survey date are also included. In addition to environmental measurements (e.g. water temperature, wind speed).

Attribute(s) Info:

Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Assessment
LTM_project_short_code	Long-term monitoring project short code	The code assigned to a long-term monitoring project, in this case, LTM_CCFRP		nominal	Def Any text			
Monitoring_Group	Monitoring group	Which of the monitoring groups affiliated with CCFRP conducted the survey		nominal	Def Any text			
CA_MPA_name_short	California Marine Protected Area name short	If the survey was conducted within a California Marine Protected Area (MPA), a shortened version of the name of that MPA		nominal	Def Any text			
Area	Area	The name of the area where the survey was conducted		nominal	Def Any text			
MPA_Status	Marine Protected Area status	MPA if the survey was conducted within a Marine Protected Area; REF if the survey was conducted within a fished reference site		nominal	Domain Info			
Date	Date	Date (YYYY-MM-DD) when the survey was conducted		dateTime				
Year	Year	The year when the survey was conducted		ratio	Unit dimensionless Type real			
Month	Month	The month when the survey was conducted		ratio	Unit dimensionless Type real			
Day	Day	The day of the month when the survey was conducted		ratio	Unit dimensionless Type real			
ID_Cell_per_Trip	IC cell per trip	A unique identifier for each survey, consisting of the two-letter area code (from the location table), M if the area was in an MPA or R otherwise, the date the survey was conducted (MMDDYY) and the grid cell number.		nominal	Def Any text			
Grid_Cell_ID	Grid cell ID	The grid cell identification code, which consists of the		nominal	Def Any text			

		two-letter area code (from the location table) and the grid cell number.						
Surface_Water_Temp_C	Surface water temperature in Celsius	Sea surface temperature in degrees Celsius, as measured by a Seabird temperature sensor, a CTD, or a hand-held meat thermometer at the beginning of each drift within the grid cell, averaged across drifts.		ratio	<b>Unit</b> celsius <b>Type</b> real			
Depth_Water_Temp_C	Depth water temperature in Celsius	Seawater temperature at depth in degrees Celsius, as measured by a Seabird temperature sensor or a CTD at the beginning of each drift within the grid cell, averaged across drifts. The depth at which this measurement was taken varied across years.		ratio	<b>Unit</b> celsius <b>Type</b> real			
Vessel_Water_Temp_C	Vessel water temperature in Celsius	Sea surface temperature as measured by the survey vessel's temperature gauge at the beginning of each drift within the grid cell, averaged across drifts. This measurement is taken in degrees Fahrenheit, and is later converted to degrees Celsius. Values from Point Lobos surveys in 2009 are likely 4 degrees Fahrenheit higher than true values.		ratio	<b>Unit</b> celsius <b>Type</b> real			
Relief_(1-3)	Relief	The degree of seafloor topography (i.e. relief), reported as one of 3 categories at the beginning of each drift within the grid cell, averaged across drifts.		ordinal	<a href="#">Domain Info</a>			
Start_Depth_m	Start depth in meters	The depth as determined by the survey vessel's echosounder at the start of each drift within the grid cell, averaged across drifts. This measurement is taken in feet and later converted to meters.		ratio	<b>Unit</b> meter <b>Type</b> real			
End_Depth_m	End depth in meters	The depth as determined by the survey vessel's echosounder at the end of each drift within the grid cell, averaged across drifts. This measurement is taken in feet and later converted to meters.		ratio	<b>Unit</b> meter <b>Type</b> real			
Wind_Speed_kt	Wind speed in knots	Wind speed in knots as measured by various devices during each drift within the grid cell. When entered into the database, the measurements are averaged (e.g., if the wind speed is listed as being “0-5 kts” or “>5 kts”, a value of 2.5 is entered.		ratio	<b>Unit</b> knots <b>Type</b> real			

Swell_Height_m	Swell height in meters	Swell height as visually estimated during each drift within the grid cell, averaged across drifts. This measurement is taken in feet and later converted to meters.	ratio	<b>Unit</b> meter <b>Type</b> real				
Total_Angler_Hours	Total angler hours	The total number of hours all volunteer anglers spent fishing during the survey; a measure of fishing effort.	ratio	<b>Unit</b> hour <b>Type</b> real				
Common_Name	Common name	The common name of each fish looked for during a given survey; these common names correspond to those provided in the species table.	nominal	<b>Def</b> Any text				
Count	Count	The number of fish of each taxon caught during a given survey; if no fish of a particular taxon were caught, a zero is entered	ratio	<b>Unit</b> number <b>Type</b> real				
CPUE_catch_per_angler_hour	Catch-Per-Unit-Effort in catch per angler hour	Catch-Per-Unit-Effort in catch per angler hours as estimated by Count divided by Total_Angler_Hours.	ratio	<b>Unit</b> dimensionless <b>Type</b> real				
BPUE_biomass(kg)_per_angler_hour	Biomass-Per-Unit-Effort in biomass (kilograms) per angler hour	Biomass-Per-Unit-Effort in kilograms per angler hours as estimated by biomass divided by Total_Angler_Hours. Biomass was calculated using the length measurements given in the CCFRP_derived_length_table. If the length of a fish was not measured, or an appropriate length to biomass conversion did not exist in the literature, biomass could not be estimated and NA is entered.	ratio	<b>Unit</b> dimensionless <b>Type</b> real				

Involved Parties

Data Set Creators

Individual:	Rachel Brooks
Organization:	Moss Landing Marine Laboratories
Position:	CCFRP Statewide Coordinator
Address:	8272 Moss Landing Road, Moss Landing, CA 95039 USA
Phone:	(831) 771 - 4479 (voice)
Email Address:	<a href="mailto:rachel.brooks@sjsu.edu">rachel.brooks@sjsu.edu</a>
Id:	<a href="https://orcid.org/0000-0002-8443-699X">https://orcid.org/0000-0002-8443-699X</a>
Individual:	Shelby Ziegler

Organization:	<b>Moss Landing Marine Laboratories</b>
Position:	CCFRP Post-Doctoral Researcher
Address:	8272 Moss Landing Road, Moss Landing, CA 95039 USA
Phone:	(831) 771 - 4479 (voice)
Email Address:	<a href="mailto:shelbylziegler@gmail.com">shelbylziegler@gmail.com</a>
Id:	<a href="https://orcid.org/0000-0001-7218-0811">https://orcid.org/0000-0001-7218-0811</a>

Individual:	<b>Richard Starr</b>
Organization:	<b>Moss Landing Marine Laboratories</b>
Position:	Research Faculty
Address:	8272 Moss Landing Rd, Moss Landing, CA 95039 USA
Phone:	(831) 771 - 4442 (voice)
Email Address:	<a href="mailto:richard.starr@sjsu.edu">richard.starr@sjsu.edu</a>
Id:	<a href="https://orcid.org/0000-0002-4010-5152">https://orcid.org/0000-0002-4010-5152</a>

Individual:	<b>Dean Wendt</b>
Organization:	<b>Cal Poly San Luis Obispo</b>
Position:	Professor
Address:	Cal Poly State University, San Luis Obispo, CA 93407 USA
Phone:	(805) 756 - 1508 (voice)
Email Address:	<a href="mailto:dwendt@calpoly.edu">dwendt@calpoly.edu</a>
Id:	<a href="https://orcid.org/0000-0002-1732-5616">https://orcid.org/0000-0002-1732-5616</a>

Individual:	<b>Benjamin Ruttenberg</b>
Organization:	<b>Cal Poly San Luis Obispo</b>
Position:	Associate Professor
Address:	Cal Poly State University, San Luis Obispo, CA 93407 USA
Phone:	(805) 756 - 2498 (voice)
Email Address:	<a href="mailto:bruttenb@calpoly.edu">bruttenb@calpoly.edu</a>
Id:	<a href="https://orcid.org/0000-0001-7874-1915">https://orcid.org/0000-0001-7874-1915</a>

Individual:	<b>Lyall Bellquist</b>
Organization:	<b>The Nature Conservancy</b>



Position:	Fisheries Scientist
Address:	8950 Biological Grade, La Jolla, CA 92037 USA
Phone:	(562) 508 - 3459 (voice)
Email Address:	<a href="mailto:lyall.bellquist@tnc.org">lyall.bellquist@tnc.org</a>
Id:	<a href="https://orcid.org/0000-0003-1247-0483">https://orcid.org/0000-0003-1247-0483</a>

Individual:	<b>Jennifer Caselle</b>
Organization:	<b>Marine Science Institute, UC Santa Barbara</b>
Position:	Research Biologist
Address:	UCSB Marine Science Institute, Building 520 Rm 4002 FI 4L, Santa Barbara, CA 93106 USA
Phone:	(805) 893 - 6062 (voice)
Email Address:	<a href="mailto:jenn.caselle@ucsb.edu">jenn.caselle@ucsb.edu</a>
Id:	<a href="https://orcid.org/0000-0002-1364-3123">https://orcid.org/0000-0002-1364-3123</a>

Individual:	<b>Steven Morgan</b>
Organization:	<b>Bodega Marine Laboratory</b>
Position:	Professor
Address:	PO Box 247, 2099 Westshore Rd, Bodega Bay, CA 94923 USA
Phone:	(707) 875 - 1920 (voice)
Email Address:	<a href="mailto:sgmorgan@ucdavis.edu">sgmorgan@ucdavis.edu</a>
Id:	<a href="https://orcid.org/0000-0002-9971-5414">https://orcid.org/0000-0002-9971-5414</a>

Individual:	<b>Timothy Mulligan</b>
Organization:	<b>Humboldt State University</b>
Position:	Professor
Address:	1 Harpst St, Arcata, CA 95521 USA
Phone:	(707) 826 - 3951 (voice)
Email Address:	<a href="mailto:timothy.mulligan@humboldt.edu">timothy.mulligan@humboldt.edu</a>

Individual:	<b>Brice Semmens</b>
Organization:	<b>Scripps Institute of Oceanography</b>

Position:	Associate Professor
Address:	UC San Diego, 9500 Gilman Dr #0202, La Jolla, CA 92093 USA
Phone:	(858) 822 - 0518 (voice)
Email Address:	<a href="mailto:bsemmens@ucsd.edu">bsemmens@ucsd.edu</a>
Id:	<a href="https://orcid.org/0000-0001-5663-9194">https://orcid.org/0000-0001-5663-9194</a>

Individual:	<b>Joseph Tyburczy</b>
Organization:	<b>Humboldt State University</b>
Position:	California Sea Grant Extension Specialist
Address:	1 Harpst St, Arcata, CA 95521 USA
Phone:	(707) 443 - 8369 (voice)
Email Address:	<a href="mailto:jtyburczy@ucsd.edu">jtyburczy@ucsd.edu</a>
Id:	<a href="https://orcid.org/0000-0002-8606-777X">https://orcid.org/0000-0002-8606-777X</a>

Individual:	<b>Scott Hamilton</b>
Organization:	<b>Moss Landing Marine Laboratories</b>
Position:	Professor
Address:	8272 Moss Landing Rd, Moss Landing, CA 95039 USA
Phone:	(831) 771 - 4497 (voice)
Email Address:	<a href="mailto:scott.hamilton@sjsu.edu">scott.hamilton@sjsu.edu</a>
Id:	<a href="https://orcid.org/0000-0001-5034-4213">https://orcid.org/0000-0001-5034-4213</a>

**Data Set Contacts**

Individual:	<b>Rachel Brooks</b>
Organization:	<b>Moss Landing Marine Laboratories</b>
Position:	CCFRP Statewide Coordinator
Address:	8272 Moss Landing Road, Moss Landing, CA 95039 USA
Phone:	(831) 771 - 4479 (voice)
Email Address:	<a href="mailto:rachel.brooks@sjsu.edu">rachel.brooks@sjsu.edu</a>
Id:	<a href="https://orcid.org/0000-0002-8443-699X">https://orcid.org/0000-0002-8443-699X</a>

Individual:	<b>Diana LaScala-Gruenewald</b>
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habitat for nearshore fishes. A grid cell is selected at random, and 30-45 minutes of timed fishing activity is conducted within the cell. Between 4 and 18 (with a mode of 12) volunteer anglers use hook-and-line rigs and fishing gear appropriate for the habitat. Different standard gear types are used on each sampling trip (with some regional variation throughout the state) to target different species. The species of fish caught is identified to the species level whenever possible. Otherwise, it is identified to the lowest possible taxonomic level. The length of each fish caught and the amount of time each angler spends fishing are also recorded.

Each of the 6 CCFRP member institutions maintains a Microsoft ACCESS database built from a uniform database template. Each member institution inputs the data into their database. A person separate from the individual who entered the data checks the data for errors. Drifts are mapped in ArcGIS to ensure that GPS coordinates are correct. Drifts are excluded from the data if they start part of the drift was greater than 50% outside the intended grid cell and ends greater than 80 m from the intended grid cell, or if the drift is completely outside of the intended grid cell and the start and end of the drift is greater than 25 m away. Finally, the data from all member institutions are combined together to produce a single statewide data set.

## Data Set Usage Rights

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