
Pacific Fisheries Information Network

West Coast Groundfish Stock Species and Complex Scorecard



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06/12/2019	Ames/Pannell		1.0
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Subject

The objective of the scorecard is to provide the "best estimate" of total mortality for groundfish stock species and complexes in the Pacific Coast Groundfish Fishery Management Plan ([here](#)). This encompasses commercial, tribal, and recreational fisheries under the jurisdiction of the Pacific Fishery Management Council. The goal is to enable close-to-real-time monitoring to support inseason management.

Background

The objective behind the new groundfish scorecard (published in 2023) was to build upon accomplishments of the previous version, released in 2019, and to incorporate recommended modifications and enhancements provided by the FIN/Groundfish workgroup. The specific enhancements to the report are detailed in Appendix 1.

PacFIN Online Scorecard Reports

The strategy for both the online non-confidential public and confidential private scorecard reports is identical. The public edition (GMT00701 report) contains stock summary information with confidential records suppressed until three distinct vessels and dealers are present. This criterion might affect data availability early in the year but does not pose issues thereafter. The private confidential edition (GMT52201) does not suppress data and offers three distinct views: (1) stock summaries (same as public version), (2) sector summaries, and (3) detailed records. Both the public and private reports can be filtered by year, and each hierarchical level in the private scorecard is interconnected through a drill down of individual stocks, progressing from stock summaries to Fisheries Observation Science groundfish sectors (i.e., FOS sectors) linked to stock allocations and set-a-sides, and then finally to detailed reports (Appendix 2 and 3).

Methodology

Data Sources

The data sources within PacFIN and RecFIN are as follows:

- **State Fish Tickets:** The state fish tickets within PacFIN's comprehensive fish ticket table includes all West Coast shorebased commercial and tribal landings¹. Groundfish species within this table are enhanced by the application of state agencies' catch-by-area and species composition proportions to correct catch areas, nominal species categories, and multi-species market categories ([here](#)).
- **Etickets:** Pacific States Marine Fisheries Commission's (PSMFC) electronic fish ticket reporting system includes all IFQ and sablefish landings, as well as the majority of groundfish landings in Washington, Oregon and all of California.
- **Comprehensive NPAC (observer data):** PacFIN's analytical table for all West Coast commercial and tribal catch and discard estimates from the at-sea whiting fishery ([here](#)).
- **West Coast Groundfish Observer Program (WCGOP):** WCGOP total annual discard estimates for all shorebased groundfish fisheries obtained from the Groundfish Expanded Mortality Multiyear (GEMM) report ([here](#)). All WCGOP discard estimates by sector and species are translated to FOS

¹ Landing is defined as retained catch

sectors and stock species or stock complexes combinations, and then are linked by year to shorebased landings in PacFIN (Appendix 2.).

- **GMT Nearshore Fixed Gear Discard Estimates:** The GMT provides annual discard estimates for the nearshore fixed gear sector because the WCGOP discards do not separate the discards by state (i.e., Oregon and California). Separating the nearshore fixed gear discards by state is necessary for regional management.
- **ODFW Oregon Recreational Estuary Mortality Estimates:** ODFW provides annual recreational estuary fishing mortality estimates for some key stocks, which are cabezon, black rockfish, blue & deacon rockfish, and kelp greenling.
- **Comprehensive Recreational Catch Estimates:** RecFIN’s analytical table that includes all West Coast marine recreational catch and discard estimates. These estimates are not in real-time and are typically delayed by several months ([here](#)).
- **Pacific Coast Groundfish Harvest Specifications and Management Measures Database System (SPEX):** The SPEX database system contains definitions of stock management specifications and allocations by year, stock (species) and area. Useful attributes from this system include ACL Code (i.e., groundfish stock species or complex database codes), Sector Allocations, set-a-sides, and Fishery Harvest Guideline (FHG), which are linked to the scorecard.

Data Integration and Estimation

All source datasets are integrated for use in the scorecard report. The integration process includes data enhancements, as well as projection estimates of landings and discards for shorebased landings. These enhancements and projection estimates are as follows:

- **Stock Assignments:** Stock assignments (i.e., ACL codes) are merged into the PacFIN and RecFIN comprehensive tables (e.g., comprehensive fish tickets, etc.) from the SPEX system. These programmatic routines translate PacFIN/RecFIN catch year, catch area, and groundfish species into management stock species or complexes.
- **Etickets:** State agencies' catch-by-area and species composition proportions are applied to the near real-time Eticket groundfish landings to correct catch areas, nominal species categories, and multi-species market categories. However, because those proportions are not available in real-time, a moving average of proportions for the most recent three years by month are used as a proxy. These Etickets and the proxy composition proportions are replaced when the validated state fish tickets and corresponding composition proportions become available.
- **Shorebased WCGOP Discard Estimates:** Annual shorebased discard estimates (i.e. Total Discard with Mortality Rates Applied) are combined with annual fish ticket landings to provide estimates of total shorebased mortality. However, because these discard estimates are not available in real time, a moving average of the most recent three years are used to estimate the WCGOP annual discards for all stocks and FOS sectors except for the nearshore fixed gear. The nearshore fixed gear discard estimates are provided by the GMT. The moving average of WCGOP discard estimates are replaced when new estimates become available in August or September of each year. Moreover, these annual estimates are “front loaded” to the current year stocks, which creates the illusion of high discards at the start of the year. Further, these discard estimates are available for stock summaries, as well as for the stock by sector (private report view), but not for detailed records because the discard estimates are not calculated at that level of granularity.

- **Shorebased Tribal Projection Estimates:** A moving average of the last three years by month are applied to current year and month when tribal landings are not available in PacFIN. These landing projection estimates are replaced when actual tribal data become available. In addition, these projection estimates are available for stock summaries and for the stock by sector summaries (private report view), but not for detailed records.

Caveats

The aim is to provide close-to-real-time monitoring to support inseason management. However, there are a few data caveats and dependencies that make this challenging.

- **GEMM Discards:** Real-time discard estimates are not available from the NWFSC. Therefore, the use of a three-year moving average is necessary as a proxy.
- **Marine Recreational Estimates:** Marine recreational catch and discard estimates are typically delayed by two to three months. Therefore, there are no close-to-real-time estimates and PacFIN does not provide any recreational projections.
- **FOS sectors:** The scorecard is dependent on the FOS sector assignments, which originate from the NWFSC (Appendix 3). The process of generating these assignments, as well as acquiring these assignments involves a delay of one to two days. As a result, the most current landings are affected, leading to situations where stocks and complexes lack a designated FOS sector, temporarily placing them under an unknown FOS sector code.
- **Stocks and Complexes:** Stocks and stock complexes are created in the SPEX database, and are a combination of species, area, and year. If any of those elements are missing from the landing or catch record, the species remains unallocated to a specific stock or complex. This situation could potentially lead to instances of unreported catch.

Output table

Report View 1. Column names and column descriptions of APEX GMT00701 & GMT52201 stock summary report views. These data can be downloaded from both the public and private scorecard reports.

Column	Column Description
ACL Code	Stock assignment code based on Species/Area/Year as defined in the SPEX database. These assignment are defined by PFMC staff and GMT members.
Stock Name	Stock assignment name based on Species/Area/Year as defined in the SPEX database.
Retained Weight (mt)	Total coast wide retained weight in metric tons of a stock for a particular year.
Discard Weight (mt)	Total coast wide discard weight in metric tons of a stock for a particular year.
Discard Average Used	Boolean (T/F); = 'T' if three-year GEMM discard moving average is used.
Total Mortality (mt)	Total coast wide mortality weight in metric tons (i.e., Retained Weight (mt)+ Discard Weight (mt)) of a stock for a particular year.
Annual Catch Limit	Annual catch limit for a stock for a particular year as defined in the SPEX database.
Percent Attained of ACL	Total Mortality (mt)divided by Annual Catch Limit * 100.

Report View 2 (Private). Column names and column descriptions of the APEX GMT52201 fishery sectors by stock summary report view. These data can be downloaded from the private scorecard report only.

Column	Column Description
Year	Year of landing/catch
ACL code	Stock assignment code based on Species/Area/Year as defined in the SPEX database. These assignment are defined by PFMC staff and GMT members.
Stock Name	Stock assignment name based on Species/Area/Year as defined in the SPEX database.
Groundfish Sector	This field contains FOS sectors or GMT sablefish code landing designation for sablefish landed north of the latitude 36° N.
Retained Weight (mt)	Total coast wide retained weight in metric tons of a stock for a particular year.
Discard Weight (mt)	Total coast wide discard weight in metric tons of a stock for a particular year.
Discard Average Used	Boolean (T/F); = 'T' if three-year GEMM discard moving average is used.
Discard Std Dev (last 3 years)	The standard deviation of three-year GEMM discard moving average, if discard average is used.
Total Mortality (mt)	Total coast wide mortality weight in metric tons (i.e. Retained Weight (mt) + Discard Weight (mt)) of a stock for a particular year.
Confidential	Identifies if the record is confidential, boolean (1 or 0); 1 if the record is confidential.
Chart	Link to a pop out chart that shows current and historical trends of stock and associated FOS sector by landing/catch dates.
Allocation /Set Aside	The SPEX allocation and/or set aside type.
Allocation /Set Aside (mt)	The SPEX allocation and/or set aside value in metric tons.
Remainder (mt)	The remainder of the SPEX allocation and/or set aside.
Percent Attained	Bar plot showing the percentage attained of the SPEX allocation and/or set aside.

Report View 3 (Private). Column names and column descriptions of the APEX GMT52201 detail scorecard report view. These data can be downloaded from the private scorecard report only.

Column	Column Description
Unique ID	Unique ID used to link records to original data sources. These ID's relate to the data source records in the "SOURCE" column. For example, if the source is COMPFT, then the unique ID is the fish ticket ID.
Source	Data source that was integrated. For example, COMPFT sources the comprehensive fish tickets (state fish tickets). Codes include: ETIX, NPAC, REC, COMPFT, AGENCY.
Agency	An agency identifier (i.e., W = WDFW, O = ODFW, and C = CDFW).
Date	Date of landing/catch.
Year	Year of landing/catch.
Month	Month of landing/catch.
Day	Day of landing/catch.
Vessel #	It can be a USCG documentation number or state registration number (ex: 1234567 or AK1234nn) or MISSING or UNKNOWN if vessel number is not provided or invalid. It is also "Null" if no vessel was used.
Fisher License #	State issued fisherman license number (CA and WA only).
Dealer #	Source agency identifier for the processor company or buyer that processed or received the delivery of fish. For CDFW this column contains a buyer-id and the processor-id is derived by taking the first five characters only.
Group Gear	PacFIN gear group code.
Catch Area	PacFIN area code after application of area comps.
Water Area	RecFIN water area name for marine recreational catch.
Species Code	PacFIN species code.
Nominal/Actual Species	Converted nominal PacFIN species codes to Actual PacFIN species codes. For example, nominal dover sole, "DVR1" would be converted to "DOVR".
DAHL Groundfish Sector	Numeric codes identifying groundfish "sectors". These sectors are meant to identify landings according to fishery components, or sectors, used in management. Sectors are

Column	Column Description
	<p>defined through a combination of species composition of landings, gear type, and permit status, among other factors.</p> <p>Dahl groundfish sector descriptions (here).</p>
Fishery Sector	This field contains groundfish fishery codes as defined by the West Coast Groundfish Observer Program.
GMT Sablefish Code	This field contains fishery codes for identifying sablefish fisheries. Primary = 'PRI', DTL Limited Entry South = 'LES', DTL Limited Entry North = 'LEN', DTL Limited Entry Unknown Area = 'LEU', DTL Open Access South = 'OAS', DTL Open Access North = 'OAN', DTL Open Access Unknown Area = 'OAU'.
Is IFQ	If landing was IFQ, flag = 'T'; if not an IFQ landing, flag = 'F'.
Retained Weight (lbs)	Total coast wide retained weight in pounds of a stock for a particular year.
Discard Weight (lbs)	Total coast wide discard weight in pounds of a stock for a particular year. At sea discards for shoreside landings is not available at this level of detail and is null.

Appendix 1. List of scorecard improvements from previous version.

General improvements:

- The reports load/render much faster than the older version.
- A metadata pdf is available for download and includes the report description along with the report columns and column descriptions.
- The inclusion of ODFW’s annual Oregon recreational estuary mortality estimates for key stocks, cabezon, black rockfish, blue & deacon rockfish, and kelp greenling.
- The inclusion of shoreside GEMM discard estimates even in cases where no landings are documented. Previous versions only included shoreside discards if a landing for that same stock, year, and sector combination had occurred. For example, in some fisheries, bycatch is typically discarded at sea and therefore landings of those bycatch species/stocks are rare. This reporting flaw has been corrected, providing more accurate estimates of total mortality of stocks and stock complexes.

GMT00701 & GMT52201 - FMP Groundfish Species Scorecard - Summary Report:

- The data presentation is the same as the older version, but has two functional displays, a table and chart.
- New column “Discard Average Used” to indicate if discard value is directly from the GEMM report or if three-year moving average of GEMM discards are used as a proxy when no discard estimates are available.

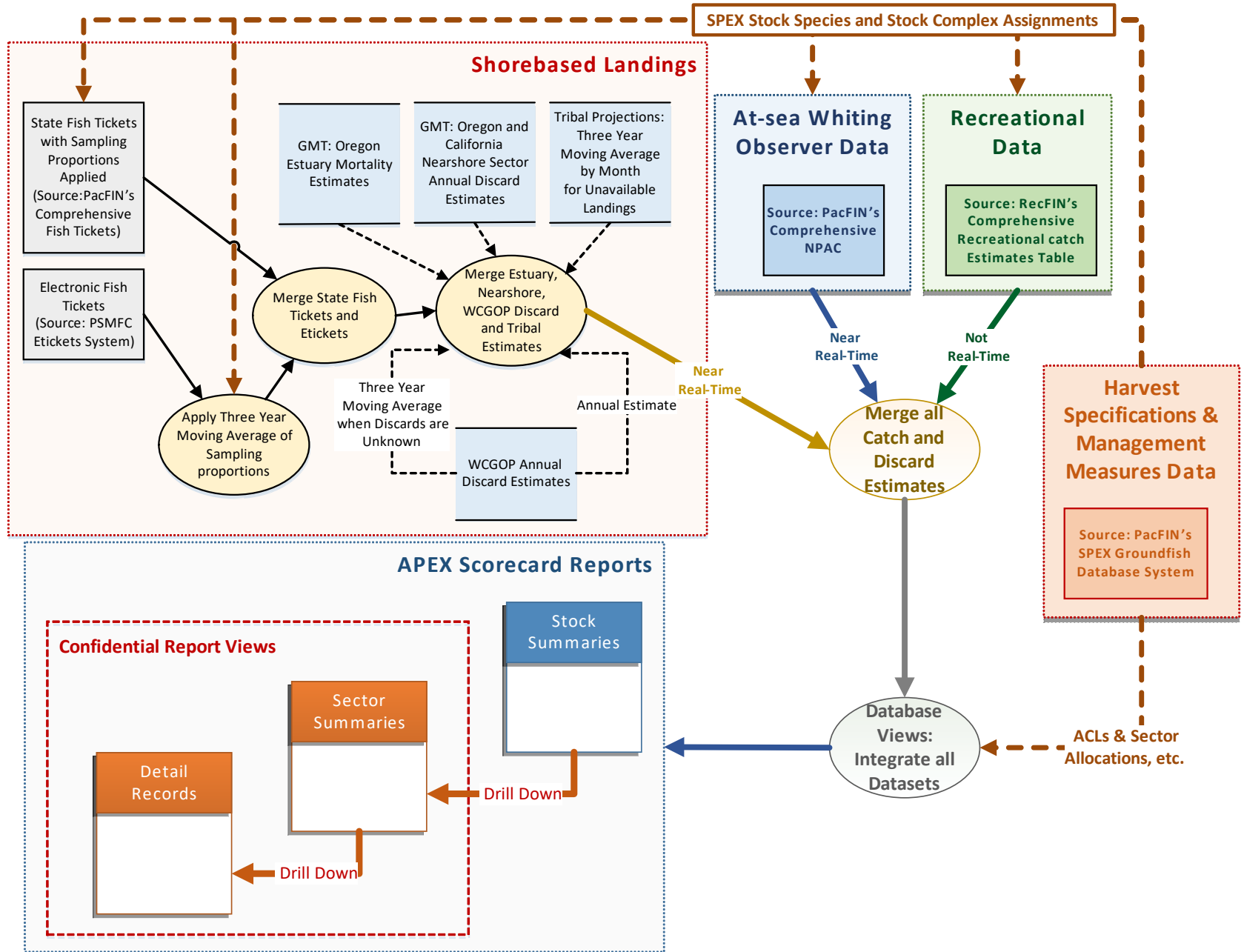
GMT52201 - FMP Groundfish Species Scorecard - Summary Report: Summary by FOS Fishery Sector:

- Replaced the hybrid GMT sector (which was a blend of Dahl sector and GEMM discard FOS groundfish sectors) with the more granular FOS groundfish sector codes for both landings and discards. The one exception is the GMT_SABLEFISH_CODE landing categories are used for sablefish landed north of the latitude 36° N.
- Discard flag to identify when an average is used when GEMM shoreside discards are not available along with variance estimates (i.e., Std Dev.) for those values.
- Trend chart plot for stock and sectors, which is similar to the old scorecard, but the sectors are now the FOS groundfish sectors provided by the NWFSC.
- Stock and sector allocation/set aside type, quantity, and remainder columns, as well as bar plots showing the percent attained.

GMT52201 - FMP Groundfish Species Scorecard - Summary Report – Detail:

- Same as before except a few additional columns, such as the FOS groundfish sector code.

Appendix 2. Schematic of the data consolidation process that is used to produce the APEX scorecard reports.



Appendix 3. Schematic on the process to obtain FOS sector codes from the NWFSC.

