



NOAA
FISHERIES

Alaska
Fisheries
Science Center

REEM Biological Sampling

Groundfish food habits (stomach collections)



Biological Sample Processing

- Two basic analysis types
 - At-sea scans
 - Lab analysis

- Collections from
 - Survey vessels
 - Observers

AK Plaice	4695	Mud Skate	68
AK Skate	2043	Myctophidae	204
Aleutian Skate	83	N Rock Sole	6620
Arrowtooth	18657	P. Cod	42491
Atka	2264	P. Halibut	6619
Bathylagidae	61	Pacific Grenadier	40
Bering Skate	44	POP	2064
Big Skate	8	Rex sole	270
Black Skate	4	S Rock Sole	285
Bocaccio	1	Sablefish	2682
Canary Rock	63	Salmon	91
Capelin	1	Sculpin	209
Dogfish	1	Sebastes	198
Dover Sole	905	Sharp North Dusky	655
Eelpout	490	Short Rough Rocks	1054
Eulachon	53	Shortsp Thorny	1255
FH Sole	12421	Sleeper Shark	13
Giant Grenadier	209	Squid	66
Gr. Turbot	3098	Unid Bathyrja	297
Greenlings	24	Unid Rajidae	655
Hake	16504	W. Pollock	82161
Herring	380	WhtBlotch Skate	33
Kamchat fl	1412	Widow Rock	18
Lg Sculpin	3107	Yellowtail Rock	202
Longsp Thorny	328	YF Sole	21525
		Grand Total	236631



Capacity

- 4 stomach processors (lab contractors), 50% non-permanent ORF funds, 50% outside funding.
- 2 senior analysts (FTEs) + 1 database specialist (FTE).
- 12,000-20,000 stomachs processed annually (processing rate depends primarily on species).
- 10-30 substantive data requests annually (in addition to website availability).
- Significant internal publication record (1 FTE modeler, 2 contractors).
- ~400,000 stomachs since 1982.

Processing and Use Priorities

- Assessment needs – set of core species for multispecies interaction monitoring and modeling
 - Pollock, Cod, ATF, halibut, POP, Atka mackerel
 - Snow crab, Octopus
- Other Agency requirements
 - SSL BiOp, AI FEP, Arctic FMP, PSEIS
- Funding specific short-term studies
 - BS, GOA Integrated Ecosystem Programs
- Requests from research partners
 - Skates, sculpins, octopus, squid, halibut, pollock, crab, other flatfish

Data Quality Control

- Specimen data is validated at the time of sample analysis
- Analysis results are validated at time of entry in the lab
- Multiple cross-comparison tests have been conducted (comparing methods, analysts)
- Data are further validated at the time of DB loading
- DB constraints enforce data integrity

Timeliness

- Lab analysis varies (weeks-months) depending on collection size and analysis method (2012 EBS groundfish survey ATF were completed in 2 weeks).
- Currently 1-2 year backlog of samples, with no backlog of assessment-critical core species.
- Data validation and uploading are typically completed within 2 days.
- Survey-based collections arrive at the lab 4-6 weeks after the completion of the survey. Observer collections are returned bi-annually.

Distribution

- Raw data are available in-house at completion of validation and loading.
- In-house use includes further validation and quality control.
- Model results are available after completion of model runs.
- Summarized data available via web-based map browser.
- Quality-controlled raw data generally available to the public in standardized form ~2 years after initial collection.

Strengths

- Strong staff with long-term experience.
- 30 years of data for long-range ecosystem monitoring.
- Strong record of scientific publications.
- Proactive data tool creation and availability.
- Direct collaboration with modelers (stock assessment and ecosystem) on needs tied to fulfilling agency responsibilities.
- Good, ongoing relations with stakeholders, including industry partners participating in observer-conducted collections.

Challenges

- Limited coverage outside of summer seasons.
- Limited staff (contractor) funding.
- Limited modeler capabilities for agency needs.
- Sample sizes need to be high for highly variable data.
- Connections outside of groundfish food webs (marine mammals, seabirds).

Solutions

- Collections partnered with other non-summer surveys (university surveys, Fisheries Interaction Team).
- Backfill FTEs
- Extended collaborations on non-groundfish species (state, USF&W).