Maine Department of Marine Resources

DMR's Statutory Mission

MRS Title 12 §6021 Purpose:

- Conserve & develop marine & estuarine resources
- Conduct & sponsor scientific research
- Promote & develop the Maine coastal fishing industries
- Advise & cooperate with local, state, and federal officials concerning activities in coastal waters
- Implement, administer and enforce the laws and regulations necessary for these purposes

Maine's Marine Resources

- More than 70 marine, estuarine, or diadromous species are harvested commercially, caught by recreational anglers, or raised by aquaculturists
- In 2021, landed value was $891 million, with a final value to Maine's economy estimated at well over $2 billion
  - 167 wholesale distributors, processors, wharfs, pounds, and co-ops, and licensed lobster dealers contributed nearly $1 billion to the Maine economy, and supported more than 5,500 jobs in 2016 (according to a 2017 report)
- Over 13,000 commercial harvesters and 1,200 dealers
- Over 200,000 recreational anglers make over 500,000 fishing trips, contributing an estimated $130 million to Maine's coastal economy

Top Ten Ports in 2021 by Ex Vessel Value

1.	Stonington	$73 million
2.	Vinalhaven	$56 million
3.	Friendship	$40 million
4.	Beals	$36 million
5.	Portland	$32 million
6.	Spruce Head	$31 million
7.	Southwest Harbor	$21 million
8.	Harpswell	$20 million
9.	Cundys Harbor	$19 million
10.	Milbridge	$18 million

Top Ten Species

2021 LANDED VALUE (millions)

1.	Lobsters	$731 m
2.	Soft Shell Clams	$25 m
3.	Elvers	$17 m
4.	Oysters	$10 m
5.	Menhaden	$10 m
6.	Scallops	$8 m
7.	Blood Worms	$6 m
8.	Urchins	$3 m
9.	Tuna	$2 m
10.	Atlantic Herring	$2 m

Aquaculture Value

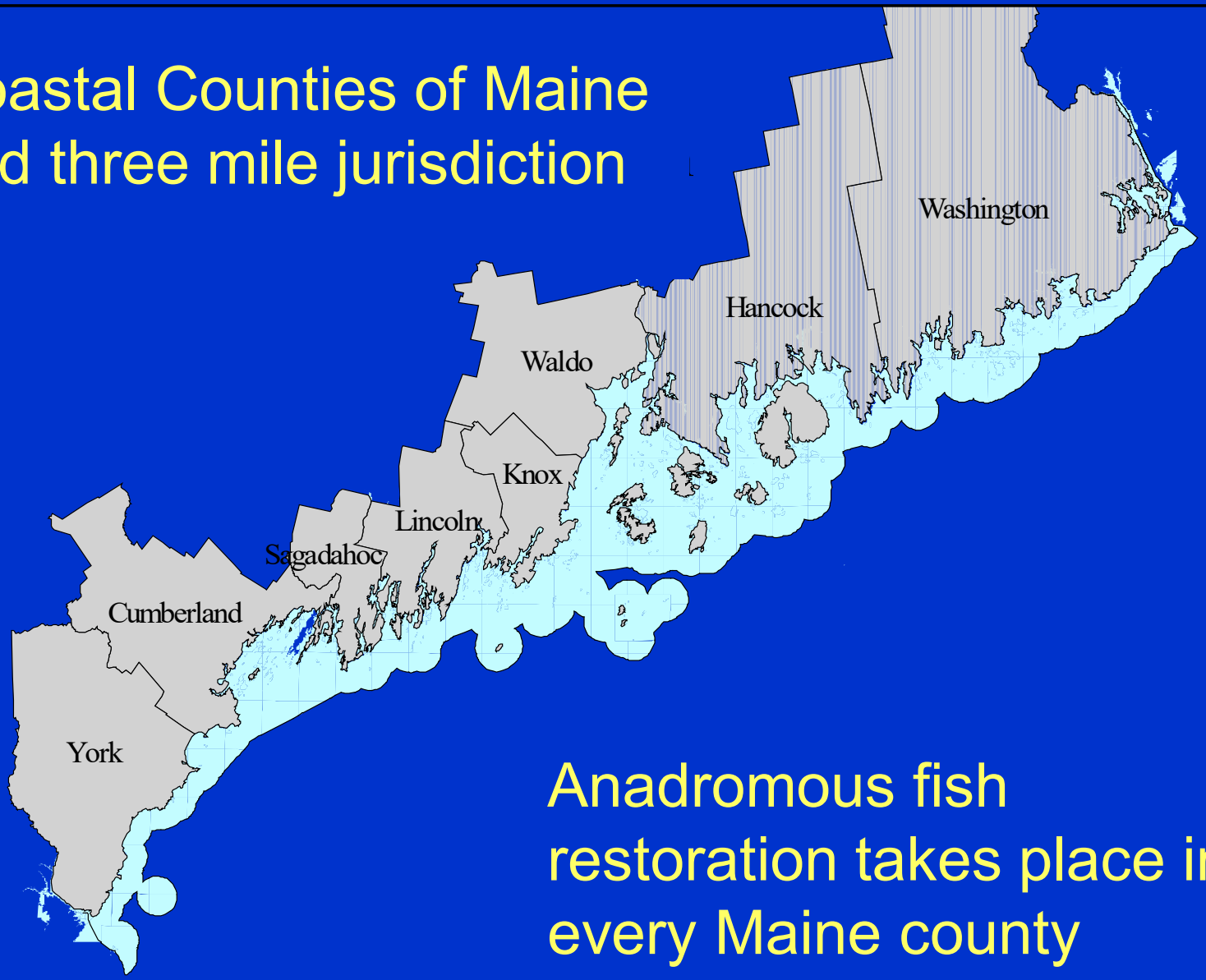
Aquaculture is worth over $75,000,000

- Oysters increased from $600K in 2003 to over $10m in 2021
- Salmon has the largest value in aquaculture
- 160 Aquaculture harvest licenses

Interstate and Federal Management

- Atlantic States Marine Fisheries Commission (ASMFC):
  - 15 Atlantic coastal states
  - 27 species managed
  - 3 Commissioners from Maine
- New England Fisheries Management Council (NEFMC):
  - 5 New England States (ME, NH, MA, RI, CT)
  - 10 FMPs for federal waters (outside of 3 miles) fisheries
- Interstate Shellfish Sanitation Conference (ISSC):
  - Develops water quality and health standards for shellfish
  - Maine must maintain compliance in order to ship shellfish interstate

Coastal Counties of Maine and three mile jurisdiction



Anadromous fish restoration takes place in every Maine county

Department Organization

Bureaus:

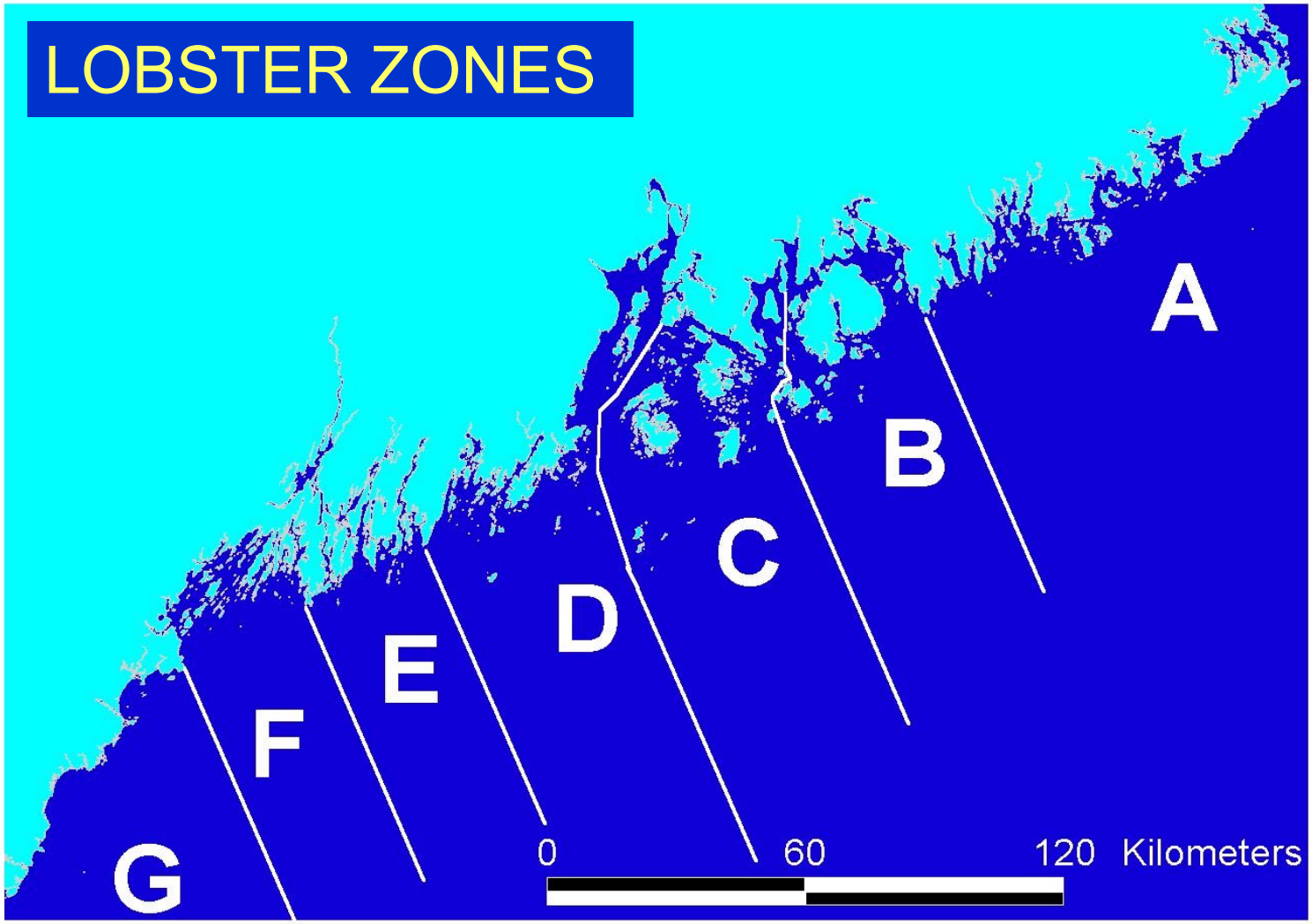
- Policy and Management
- Marine Patrol
- Marine Science
- Sea Run Fisheries and Habitat
- Public Health

BUREAU OF POLICY AND MANAGEMENT

- Develops policy initiatives at state, regional and federal management levels
- Staffs Advisory councils that provide input into management processes
- Administers public hearings for regulation changes
- Administers licenses
- Administer aquaculture leasing process*

Advisory Councils

- Vehicles for stakeholder input on management measures and research agendas:
  - DMR Advisory Council
  - Lobster Advisory Council
  - 7 Lobster Policy Management Councils
  - Sea Urchin Zone Council
  - Scallop Advisory Council
  - Commercial Fishing Safety Council
  - Aquaculture Advisory Council
  - Lobster Research, Education and Development Board
  - Shellfish Advisory Council
  - Seaweed Fishery Advisory Council


LOBSTER ZONES
A
B
C
D
E
F
G
0
60
120 Kilometers

Division of Aquaculture

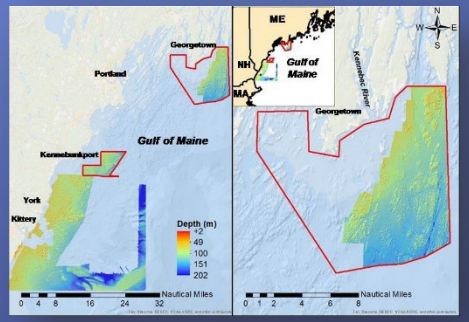
- Administer Limited Purpose Aquaculture licenses and aquaculture leases
- Conduct hearings
- Create site reports
- Develop education materials
- Provide outreach
- Conduct research

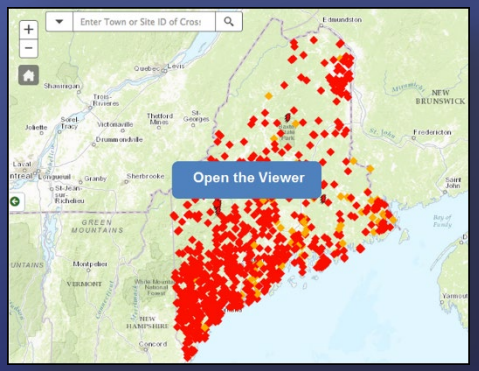
Maine Coastal Program

- Became a DMR program in 2017
- Authorized by Coastal Zone Management Act of 1972
- A networked program that focuses on coastal pollution remediation, climate adaptation, coastal habitat mapping, municipal planning and development, and working waterfront protection.
- Distributes Federal funds to enable projects that benefit Maine's coastal communities.

Maine Coastal Program Projects

- Coastweek 2021
  - Pounds cleaned: 666
  - Miles of waterfront cleaned: 302
  - Total volunteers: 114
- Coastal Mapping Initiative
  - Critical data about the seafloor and oceanic environment
- Maine Stream Habitat Viewer
  - Displays habitats for several stream-dependent species important to Maine's economy, ecology and way of life





BUREAU OF MARINE PATROL

Maine's Coastal Wardens Since 1869

49 Sworn Marine Patrol Officers

*4 vacant positions as of January 2023

5 support staff → 3 administrative secretaries & 2 marine mechanics

Two Divisions / Six Sections

Headquarters → Augusta

Special Services/Watercraft Maintenance → Rockland

Division 1→ Kittery to Camden (Div HQ → West BBH)

Section 1 → Kittery to Yarmouth

Section 2 → Freeport to Bremen

Section 3 → Waldoboro to Camden

Division 2 → Lincolnville to Calais (Div HQ → Lamoine)

Section 4 → Lincolnville to Ellsworth

Section 5 → MDI to Milbridge

Section 6 → Harrington to Calais

3478 miles of coastline, 2000+ coastal islands, and 7000+ sq miles of coastal waters to patrol

Mission and Duties:

- Protect and Conserve the State's Marine Resources
- Investigate violations and enforce State & Federal marine resource laws and regulations
- Patrol the coastline and State & Federal waters
- Protect Public Health
- Boating safety outreach and enforcement

More than fisheries enforcement:

Marine Patrol Officers perform many other duties in service of the State of Maine:

Criminal Law Enforcement

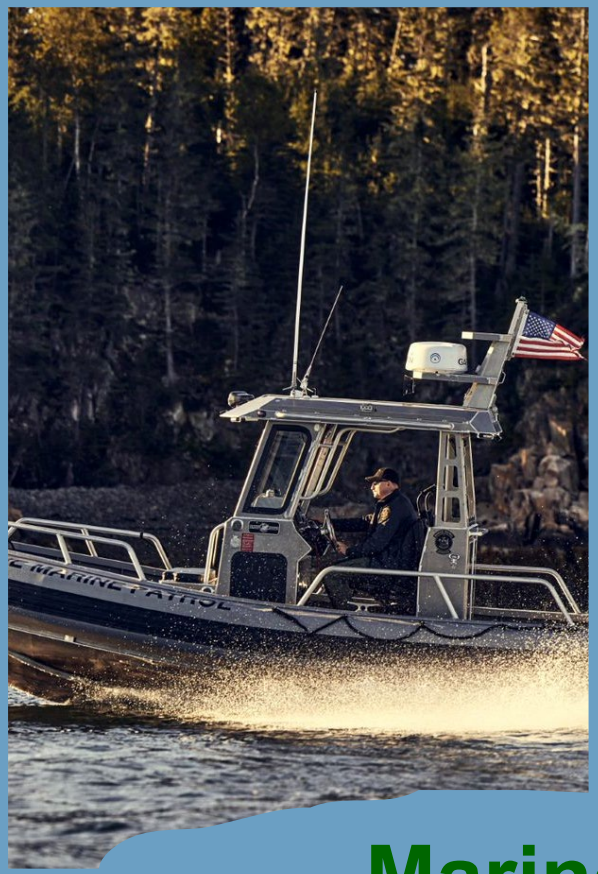
Search and Rescue

NMFS Federal Deputy

Underwater Recovery

Whale Disentanglement

Homeland Security



Marine Patrol Assets:

(6) Large Patrol Vessels

(7) Midrange Patrol Vessels

(22) Inshore Patrol Vessels

(1) Sea Plane

(47) 4x4 Pick-up trucks

Targets on the RADAR:

The Bureau of Marine Patrol continues to adapt to staffing, equipment, and industry challenges:

Staffing: BMP is not immune to the recruitment and retention challenges faced by all law enforcement agencies in Maine. Despite its unique mission and work environment, attracting and retaining qualified candidates remains a top priority.
The agency has recently restructured staffing in the Eastern portion of the State to better address duty schedule coverage issues. We have also added flexibility to officer's living requirements within their assigned patrols to help ease the burden of finding affordable housing on the coast.

Equipment: BMP continues to work through difficulties related to new vehicle availability and has begun to introduce hybrid vehicles into the Bureau's patrol vehicle fleet.

BMP is also making strides in replacing several 20+ year old vessels in both its small and large patrol vessel fleets. As part of this effort, plans are underway to construct a large patrol vessel (50+ foot) capable of safely accessing, hauling, and inspecting many of the large 40+ trap lobster trawls being fished offshore as a result of new Right Whale gear requirements. The vessel is being supported by ARPA funding and will incorporate an environmentally friendly Tier 4 marine diesel engine – what is likely to be the first such technology used aboard a Maine fiberglass lobster boat.

BUREAU OF MARINE SCIENCE

Bureau of Marine Science Mission

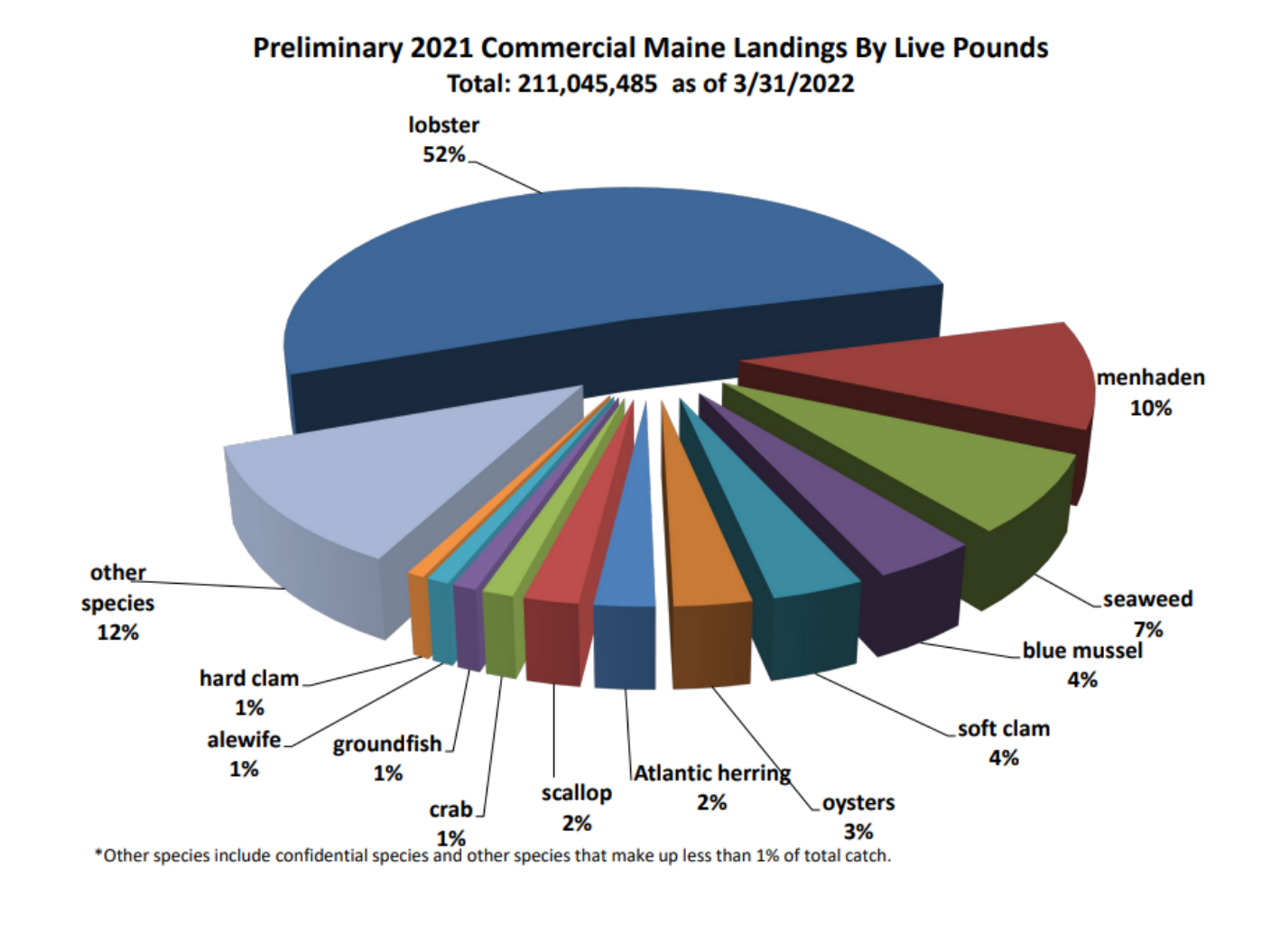
- Fishery research and monitoring
- Critical habitat protection
- Marine resource education

2021/22 Re-organization

- Div. of Biological Monitoring and Assessment
- Div. of Ecology and the Environment (new)

Landings Program

- Who reports? Wholesale dealers and retailers buying directly from harvesters; harvesters in many fisheries



Why is Landings information important?

- Accurate and timely info = better management
- Forms the basis of understanding removals and allocating monitoring resources
- Quota monitoring
- Demonstrate the importance of Maine's fisheries (value, participation, seasonality)
- **2023 100% reporting in the lobster fishery**
- **2024 vessel tracking Federal lobster fishery**

Monitoring Programs

Inshore Trawl Survey

- 21 years of Spring & Fall surveys
- Multispecies – groundfish, lobsters & bottom communities
- Identifying annual trends, seasonal patterns
- Used in up to 13 stock assessments

Long-term fishery monitoring programs

- American Lobster
- Atlantic Herring
- Green Sea Urchin
- Recreational fishery surveys

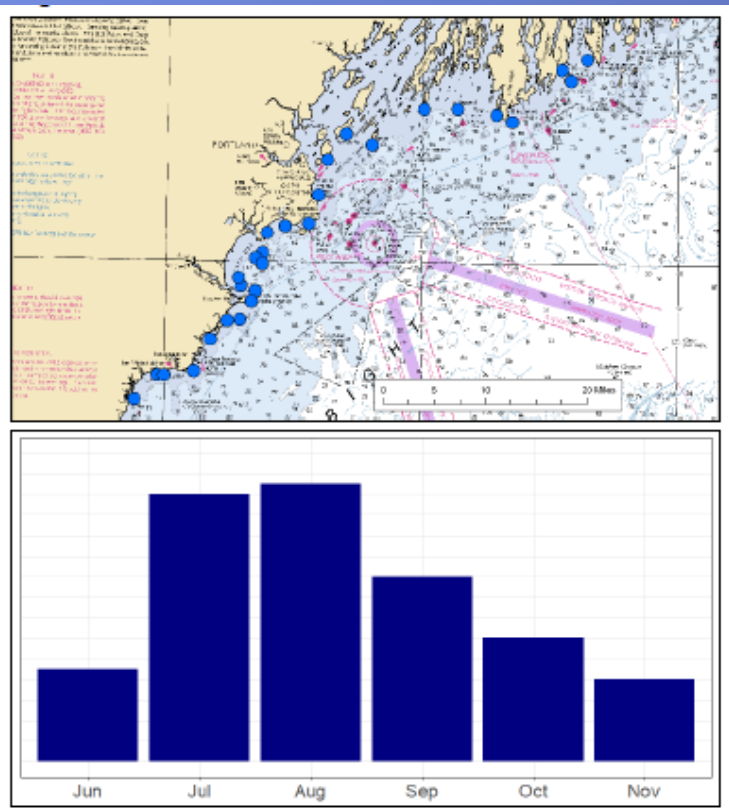
2023 New UM Faculty – Climate impacts

2023 Review of Monitoring Programs

Division of Ecology and Environment

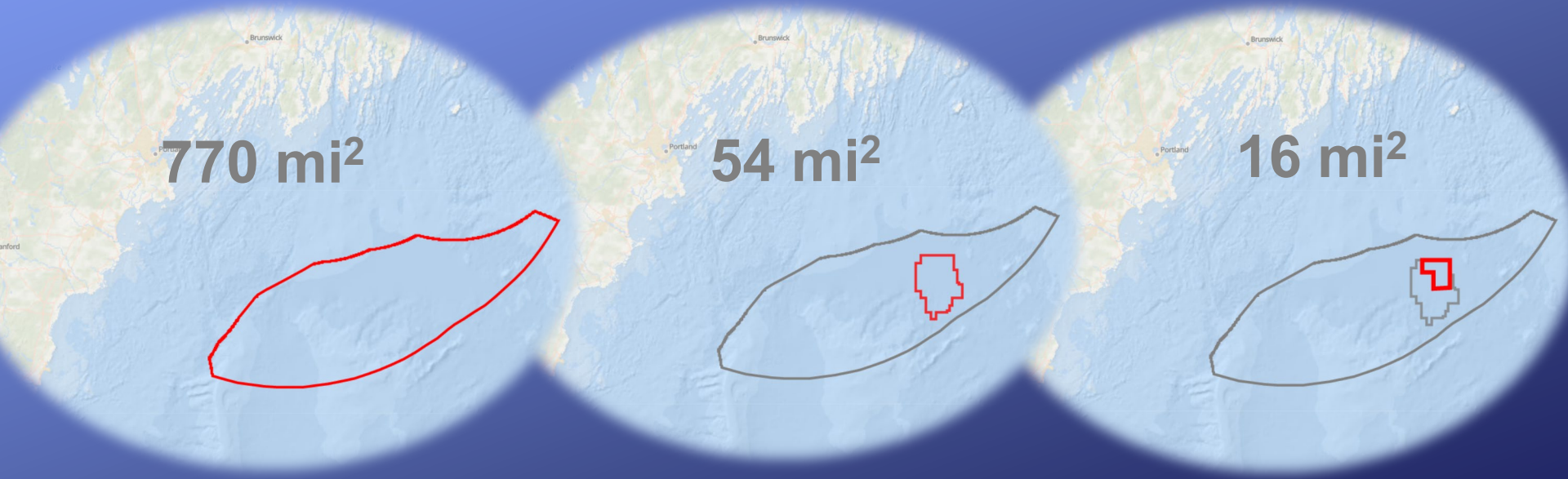
Research programs in emerging high priority areas

- Whales
- Wind
- Sharks
- Ecosystem shifts
  - Trawl survey



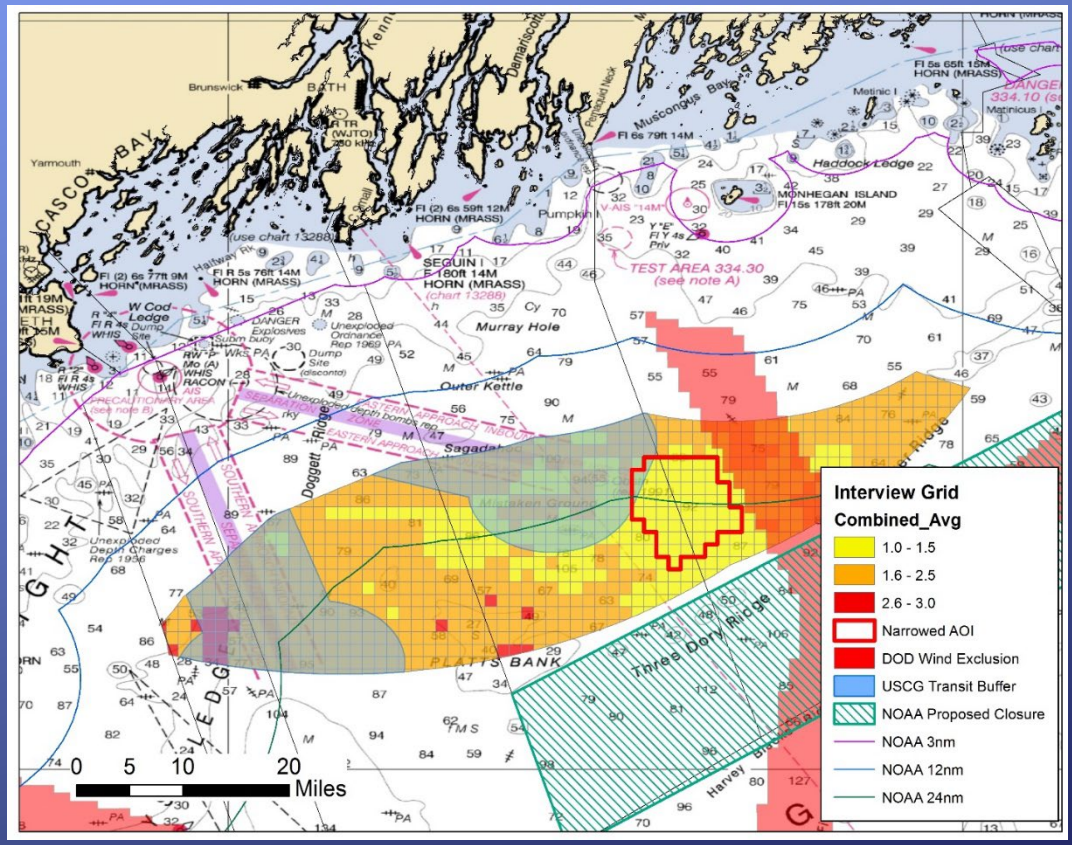
Top: nautical map displaying the location of the 28 successfully recovered passive acoustic receivers deployed as part of the 2022 effort. Bottom: graph displaying the relative monthly shark activity (based on # days ≥ 1 white shark was detected) across all receivers since monitoring began in 2020.

Offshore Wind Research
Siting The Research Array



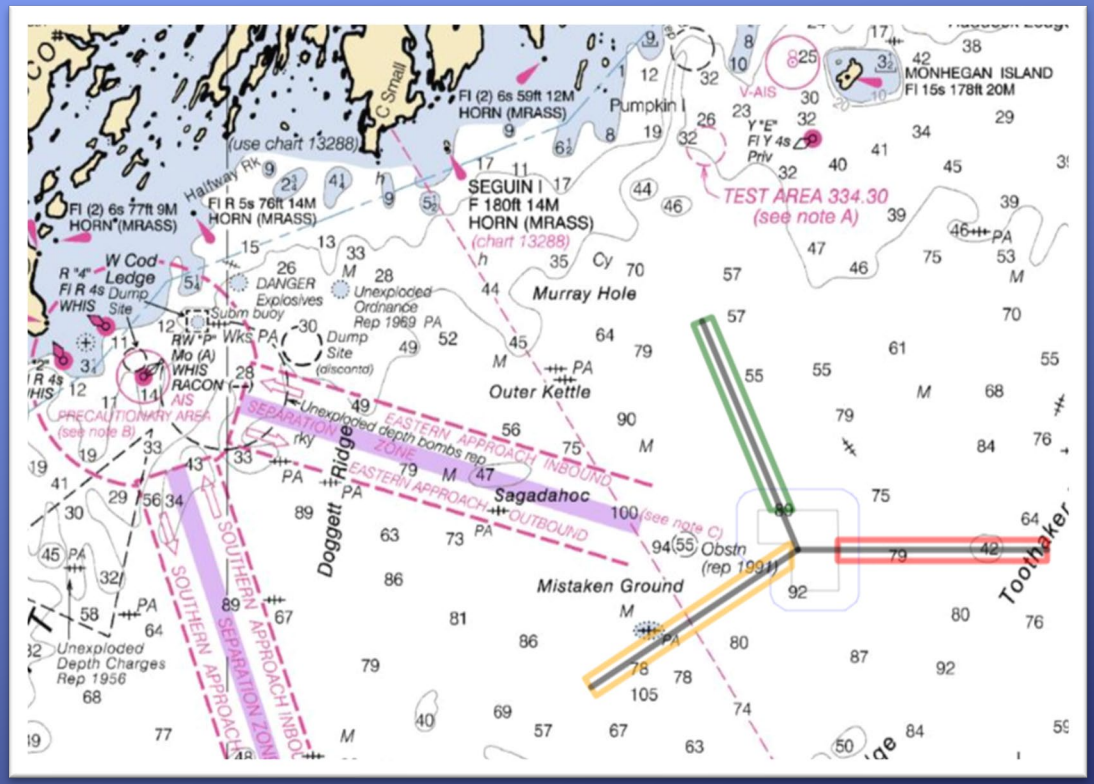
Narrowed Area Conclusions

- All areas have fishing activity
- Attempted to minimize the conflict within development criteria
- Preferred anchoring habitat impacts species/gear
- Trawl gear activity, perhaps localized impacts
- Synergy wildlife/fisheries
  - Ecosystem and Fisheries Impacts



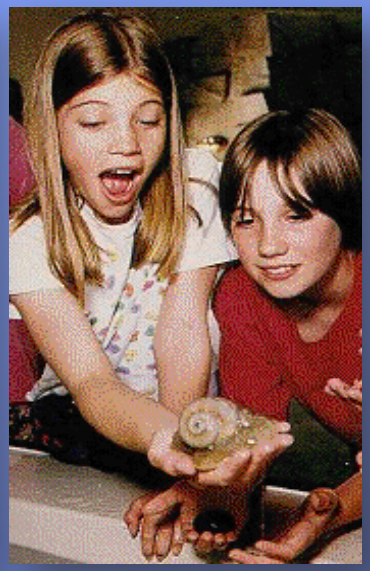
Research Approach

- **Ecosystem Based**
  - Gradient Sampling
  - Integrated biological and physical monitoring
- **Co-existence and Transmission**
  - Impacts (direct & in-direct) on fishing
  - Displacement
  - Derelict fishing gear
  - EMF concerns
  - Habitat impact



Marine Education

Maine State Aquarium



- Touch tanks featuring regional marine species
- Interactive computer kiosks
- Programs and resources for educators
- 45,000 visitors in 2018
- Closed 2020-2022
- Significant sea water damage
- Repairs and reopening in 2023

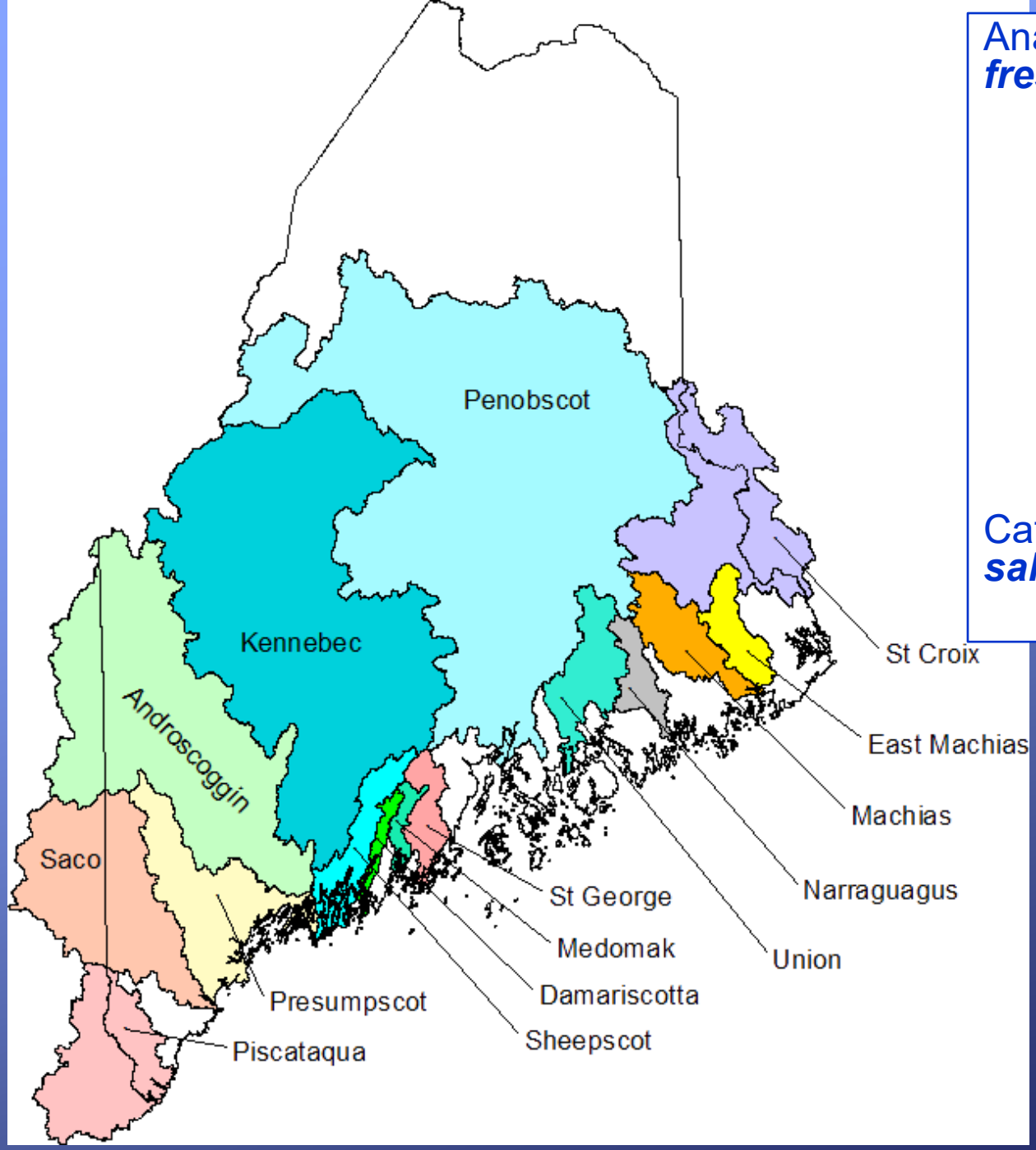
Burnt Island Lighthouse

- Public access
- Educational programs in living history, navigation, ecosystems, fisheries, art and music
- Recreational opportunities
- 2021 Bicentennial Celebration (restoration of keepers house and light tower)
- 2023 New pier and floats



Bureau of Sea Run Fisheries & Habitat Mission

- To conserve, manage, protect and restore diadromous fish populations to their historic range;
- To secure sustainable recreational and commercial fisheries for diadromous species;
- To conduct and coordinate projects involving research, planning, management, connectivity, restoration and propagation.



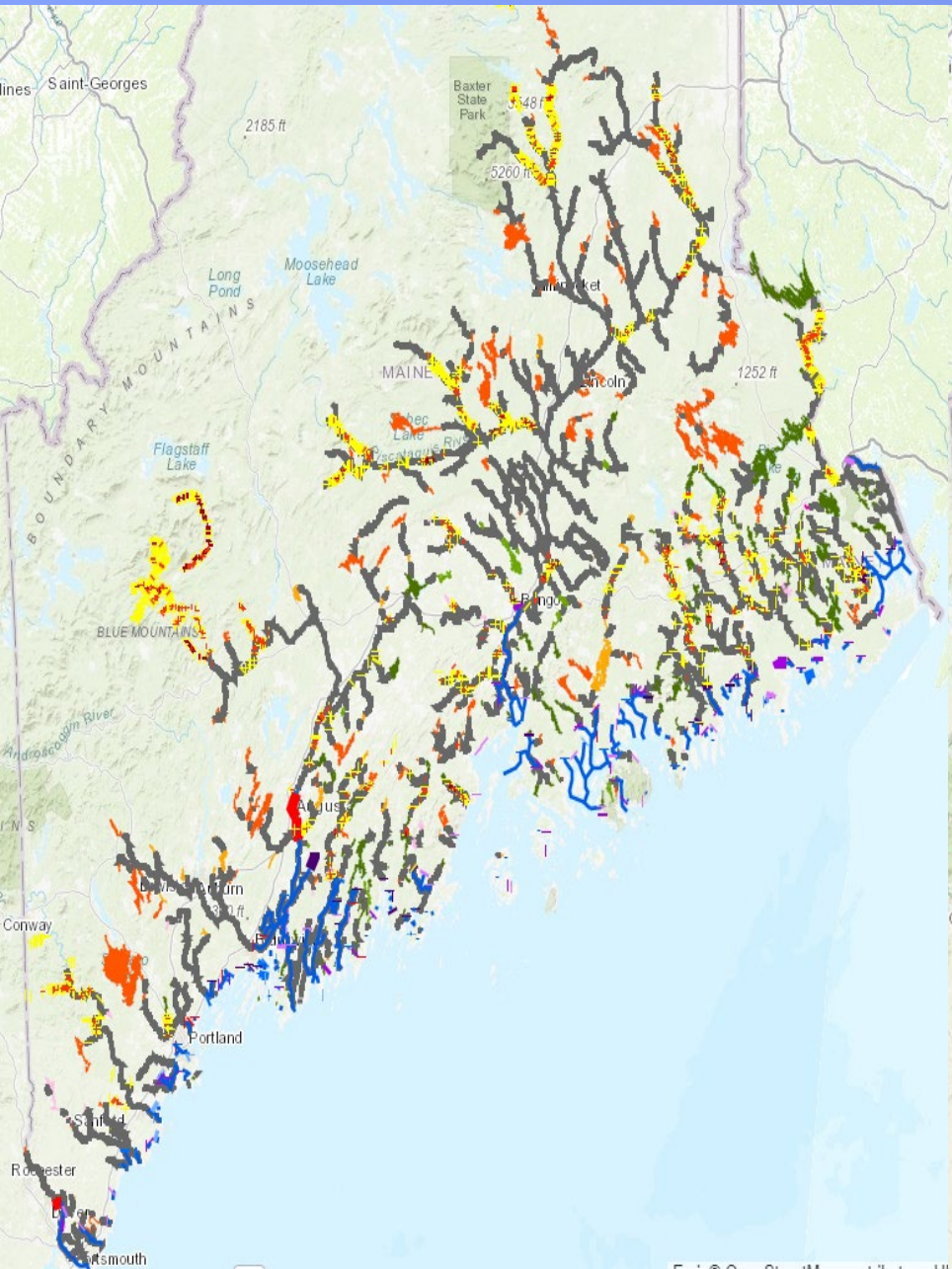
Anadromous – ***spawn in freshwater***

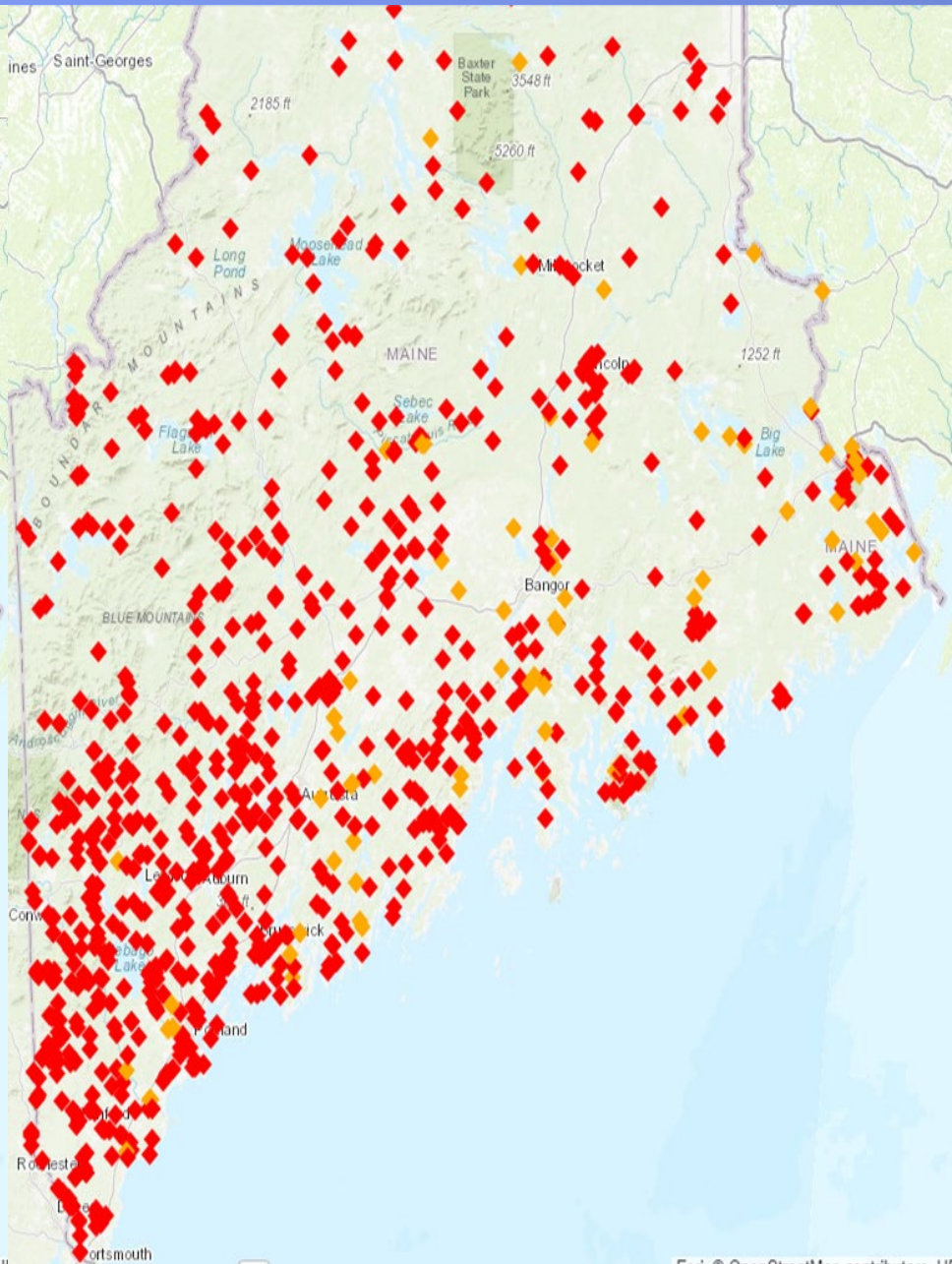
- Alewife/Blueback Herring (River Herring)
- American Shad
- Atlantic Salmon
- Striped Bass
- Rainbow Smelt
- Atlantic Tomcod
- Sea Lamprey
- Sturgeon (Atlantic and Shortnose)
- Brook Trout

Catadromous – ***Spawn in saltwater***

- American Eel

Sea-Run Habitats in Maine





Ongoing Fish Conservation Activities

Alewife, Atlantic Salmon,
and Shad Stocking / Transfers

Assessments/Research

Habitat Restoration

Examples of Current Work

Challenges and Opportunities

- Developing new runs of fish and fisheries for municipalities
- Competing for federal funding
- Building support for improving fish passage

Bureau of Public Health

There are five major programs:

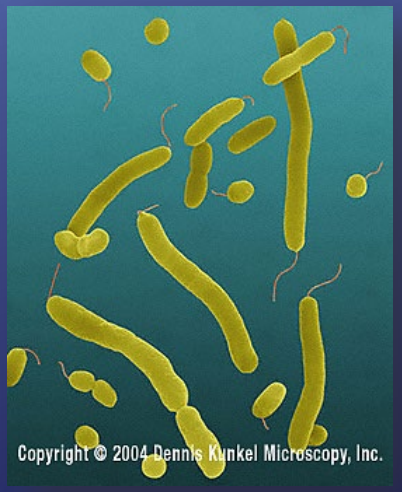
- Growing Area
- Dealer Inspection
- Laboratory
- Nearshore Marine Resources
- Permit Review

The Numbers

- Maine bivalve shellfish industry worth $42,991,307 in 2021
  - Soft-shell clams $25,220,600
  - Quahogs increased from $16,000 in 2003 to $3,238,245
- Marine worms worth $7,448,956
- 2,531 harvesters and 250 dealers

Public Health and Shellfish Sanitation

- Bivalve shellfish are filter feeders and pose a unique risk to consumers
- Potentially vectors of illness due to raw or lightly cooked consumption
- Can transmit viruses, vibrio and biotoxins



Managing the Risk

- Bivalve shellfish are always a risk
- Public health programs are designed to manage that risk
- US follows the NSSP Model Ordinance (MO) as developed by the ISSC
- DMR is the sole state authority

NSSP Fundamentals

- Certified laboratories
- Establishes water quality standards
- Establishes biotoxin limits
- Establishes safe handling and trace-back capability

Nearshore Marine Resources

- Development and approval of municipal shellfish conservation programs
- Resource evaluations
- Applied research projects
- Other resources (mussels, worms, periwinkles, whelks, seaweed)
- Climate monitoring

Environmental Permit Review

- Conduct site evaluations
- Coordinate DMR comments
- Hold public hearings
- Follow up with permit conditions

Climate Work Update

- Providing support for new UMaine School of Marine Science faculty – work is focused on climate impacts on Maine fisheries.
- Reviewing DMR Monitoring Programs to better detect climate impacts
- Developing baseline surveys to understand ecological and fishery impacts of Maine Research Array
- Reorganizing Department programs (e.g. Division of Ecology and Environment; Nearshore Marine Resources Program) with a focus on understanding climate impacts

Maine Coastal Program Climate Work

- MCP's Shore and Harbor Planning Grants program assists 5-8 coastal towns each year with with planning for storm-resilient harbors and waterfronts.
- MCP maps bathymetry and bottom habitats in both nearshore and offshore waters. These extremely detailed, publicly-available maps help DMR track species assemblages over time.
- MCP is measuring changes in saltmarsh elevations to see how sea level rise is affecting their health.
- MCP developed a "Coastwise" toolbox to help towns and road owners restore tidal flow to coastal streams, improving ecosystem health *and* reducing flooding.

Emerging Issues

- Climate Change
- Offshore Wind
- Whale Regulations
- Lobster Bait
- Biotoxins
- Stock Resilience
- Diversification
- Entry
- Working Waterfront