Atlantic States Marine Fisheries Commission

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Shad & River Herring Technical Committee
Meeting Summary

October 6, 2026

Technical Committee Members: Matthew Jargowsky (Chair, MD), Wes Eakin (NY), Patrick McGee (RI), Patrick McGrath (VA), Conor O'Donnell (NH), Reid Hyle (FL), Brian Neilan (NJ), Kyle Rachels (NC), Coja Yamashita (PA), Brad Chase (MA), Kyle Hoffman (SC), Jim Hawkes (NOAA), Jim Page (GA), Johnny Moore (DE), Ted Castro-Santos (USGS), Ingrid Braun-Ricks (PRFC), Kevin Job (CT), Mike Brown (ME)

ASMFC Staff: James Boyle and Katie Drew

The TC met via webinar on October 6, 2026, to review updates regarding the Sustainable Fishery Management Plans (SFMPs) for Maine and Florida (American shad), as well as updates to the Alternative Management Plan (AMP) for South Carolina (river herring) and the Habitat Plan for the Delaware River Basin Cooperative (DE COOP). Additionally, the TC reviewed the sustainability metrics and management responses in South Carolina and New York, discussed the timing of the next stock assessments, and provided feedback on American shad tagging to Pennsylvania.

1. Delaware River Basin Cooperative

Sheila Eyler presented an update to the American shad habitat plan. The 2021 plan remains accurate and active, and DE COOP intends to continue using the plan for the next five years. The plan notes the removal of 33 dams since 2020, with 4 more planned in Delaware and New Jersey. Additionally, the plan notes the increase of invasive species in the river basin in recent years, which may increase predation on American shad.

DE COOP also requested a 1-year extension to submit an updated SFMP for American shad to incorporate the results of the 2026 creel survey, which is the first creel survey since 2002. Furthermore, the sustainability metric tracking adult spawning shad has exceeded its benchmark in the current SFMP. The benchmark is based on a survey from a single location, and the Coop will consider updating this benchmark to ensure it is more reflective of adult spawning populations in the river.

TC recommended approval of habitat plan update and extension of current SFMP through 2027.

The TC discussed the necessity for jurisdictions to update habitat plans every 5 years and considers the plans to need updating less frequently than SFMPs. According to Amendment 3, "All plans are to be regularly reviewed, assessed and updated as needed on five-year basis by the state or jurisdiction that prepared them, with a summary report of the review provided to the Board." **The TC recommends jurisdictions review their plans every 5 years but only submit new habitat plans when new information requires them to be updated.**

2. **Maine American Shad SFMP Update**

M. Brown presented the updated SFMP, which contained no significant changes from the previous version. Maine will continue to prohibit commercial harvest and maintain a recreational limit of 2 American shad per day, and the sustainability metrics were updated with data through 2025. **The TC recommended the updated plan for approval by consensus.**

3. **South Carolina River Herring AMP Update**

K. Hoffman presented the updated AMP. which contained no significant changes from the previous version. South Carolina's recreational fishery has a 1-bushel (22.7 kg) fish aggregate daily creel for blueback herring in all rivers throughout the state; however very few recreational anglers target blueback herring, and none have been observed outside of the Santee-Cooper system. Additionally, legislation to change the current daily limit to a more enforceable creel (e.g., a specific number of fish) has been developed and vetted through an internal working group and is awaiting introduction to the South Carolina General Assembly. SCDNR plans to continue current fishery-dependent and fishery-independent monitoring for the foreseeable future. **The TC recommended the updated plan for approval by consensus.**

4. **South Carolina Sustainability Metric and SFMP Update**

South Carolina reported that the Edisto River fishery-dependent gillnet CPUE index has reached 3 years below the benchmark, triggering a management response. Beginning in 2025, South Carolina reduced allowable yards of nets in the commercial fishery (67-78% reduction). Additionally, due to attrition in the commercial fishery, the sustainability metric will be updated to a more useful index in the next iteration of the SFMP. The TC did not recommend further action.

5. **Florida American Shad SFMP Update**

After 9 consecutive years below sustainability metrics, FWC voted to remove American shad from the statewide bag limit and become catch and release only. Therefore, Florida has determined to remove their SFMP until harvest may be permitted again.

6. Review New York Sustainability Metrics

In 2025, New York's Young-of-Year sustainability targets for both species of river herring were below their respective 25th percentile targets for the third consecutive year, triggering a management response. However, positive results in total mortality and adult relative abundance indices suggest that recruitment is being affected by environmental conditions rather than fishing mortality making selecting the appropriate management response challenging. New York will be closing a loophole in permitting that allows some unregulated inland river herring harvest and will consider further action dependent on the outcome of an updated creel survey scheduled for 2028, which is the first since 2003. The TC did not recommend further action.

7. Discuss Timing of Shad Benchmark and River Herring Assessment Update

The TC reviewed the assessment schedule, which includes a river herring assessment update and American shad benchmark to be completed in 2029 and 2030, respectively. Given the significant overlap of workload and staff that this would require, the TC is recommending maintaining the 2029 river herring assessment update and postponing the American shad benchmark.

River Herring Alternative Management Plan for South Carolina

Submitted by

The South Carolina Department of Natural Resources
Wildlife and Freshwater Fisheries Division and the Office of Fisheries Management

May 13, 2026

Introduction:

Historical fisheries for river herring (e.g. blueback herring) in the waters of the ACE Basin (Ashepoo, Combahee, Salkehatchie, and Edisto Rivers) and Savannah River (Savannah and Coosawhatchie Rivers) watersheds, South Carolina (SC) are negligible. No commercial fisheries occur in any of these rivers and opportunities for both recreational and commercial fishers to land river herring exist at other specific locations in the state where fish aggregate (e.g. Santee-Cooper dam tailraces). The South Carolina Department of Natural Resources (SCDNR) monitors these locations with daily creels, because it is where the majority of fishing occurs annually. River herring harvest is recorded to help enumerate approximate run size and escapement.

The purpose of SC's alternative management plan for river herring is to allow waters of the ACE Basin and Savannah River watersheds to remain open for recreation fishing purposes. This plan is submitted to fulfill requirements of Amendment 2 to the Interstate Fishery Management Plan for Shad and River Herring (River Herring Management).

Management of blueback herring in SC is shared between the Marine Resources and Wildlife and Freshwater Fisheries Divisions of SCDNR. Management units are defined by stock and the complex of river(s) utilized.

ACE Basin and Savannah River Watersheds (Figure 1)

Commercial River Herring Fishery

There are no recorded landings for river herring and no commercial fishing is allowed.

Recreational River Herring Fishery

SC's recreational fishery has a 1 bushel (22.7 kg) fish aggregate daily creel for blueback herring in all rivers throughout the state, however very few recreational anglers target blueback herring, and none have been observed outside of the Santee-Cooper system. Additionally, legislation to change the current daily limit to a more enforceable creel (e.g., a specific number of fish) has been developed and vetted through an internal working group and is awaiting introduction to the SC General Assembly.

SC monitors directed recreational fishing effort for river herring in the Santee-Cooper system, and landings data are provided in annual compliance reporting for the sustainable fishery management plan. SC is unaware of any directed recreational fishing for river herring outside of this system, and recreational creel surveys funded by the National Marine Fisheries Service (NMFS) (e.g. Marine Recreational Information Program [MRIP]) show no harvest or directed effort for river herring in any of the ACE Basin Rivers or Savannah River watersheds (Figure 2).

Fishery-Independent Monitoring

SCDNR conducts a fishery-independent effort utilizing electrofishing gear in the Savannah River and partners with USFWS at the Bears Bluff National Fish Hatchery on requisite sampling in the Edisto River. This has been done annually since 2010 to assess American shad recruitment in these rivers. Surveys are performed from August through November (24 weeks) and are designed to collect young-of-year (YOY) juvenile American shad, but any fish collected are enumerated and measured. Sampling events occur weekly at numerous predetermined nursery sites to establish the relative abundance of juvenile shad in SC watersheds. In addition, these data collection efforts assist with determining distribution, growth rates, feeding habits, and timing of out-migration. In the 16 years that this survey has been conducted, only 139 herring have been observed during electrofishing efforts. Similarly, an electrofishing survey conducted by Georgia Department of Natural Resources targeting adult American shad in the Savannah River at the first barrier (New Savannah Lock and Dam) yielded only 10 river herring for the same time series.

SCDNR also conducts telemetry studies on the ACE Basin and Savannah River watersheds to track Atlantic and shortnose sturgeon behavior. Beginning in 2010, an extensive array of ~300 ultrasonic receivers was deployed in SC's major river systems and throughout intercoastal waterways (Figure 3). In most cases, receivers are located a few kilometers apart from the mouth of rivers (river kilometer [rkm] 0) to potential spawning areas for sturgeon (rkm ~321). In order to ensure proper operation, collect movement data, and minimize loss, receivers are downloaded regularly.

From 2010 to present, ~113 receivers were downloaded regularly in the ACE Basin and Savannah River watersheds (Figures 4–6). Telemetry data were collected during all months to ensure all available sturgeon detections were recorded, with increased effort during spring months when both Atlantic and shortnose sturgeon spawn. This also coincides with shad and river herring adult migrations in these rivers. During download trips, most areas of rivers in the ACE Basin and Savannah River watersheds were traveled by boat. At no time did staff encounter any individuals targeting shad or river herring, most were traditional float fishers using bait targeting gamefish.

Management Recommendation

Amendment 2 to the shad and river herring FMP states, in the absence of a sustainable fishery management plan for river herring, the Management Board can approve an alternative management program proposed by a state or jurisdiction if the state or jurisdiction can show to the Management Board's satisfaction that the alternative proposal will have the same conservation value as the measure contained in this amendment or any addenda prepared under Adaptive Management.

SC currently has no fisheries for river herring (commercial or recreational) in the ACE Basin or Savannah River watersheds. Because river herring are considered functionally absent in these areas, it is impossible to develop a sustainable fishing plan with any credible metrics. SCDNR plans to continue current fishery-dependent and fishery-independent monitoring for the foreseeable future. In the event that the MRIP survey reveals positive harvest of river herring for 3 consecutive years indicating exploitation by recreational fisheries is occurring, SCDNR will initiate a review process to demonstrate sustainability for these river systems. If sustainability cannot be demonstrated, SCDNR will initiate regulatory changes for these rivers systems. Regulatory changes that may be considered range from catch and release fishing only to full closure.

Reporting

SCDNR will provide updates for fishery-dependent and fishery-independent monitoring for these river systems in annual compliance reports for shad and river herring.

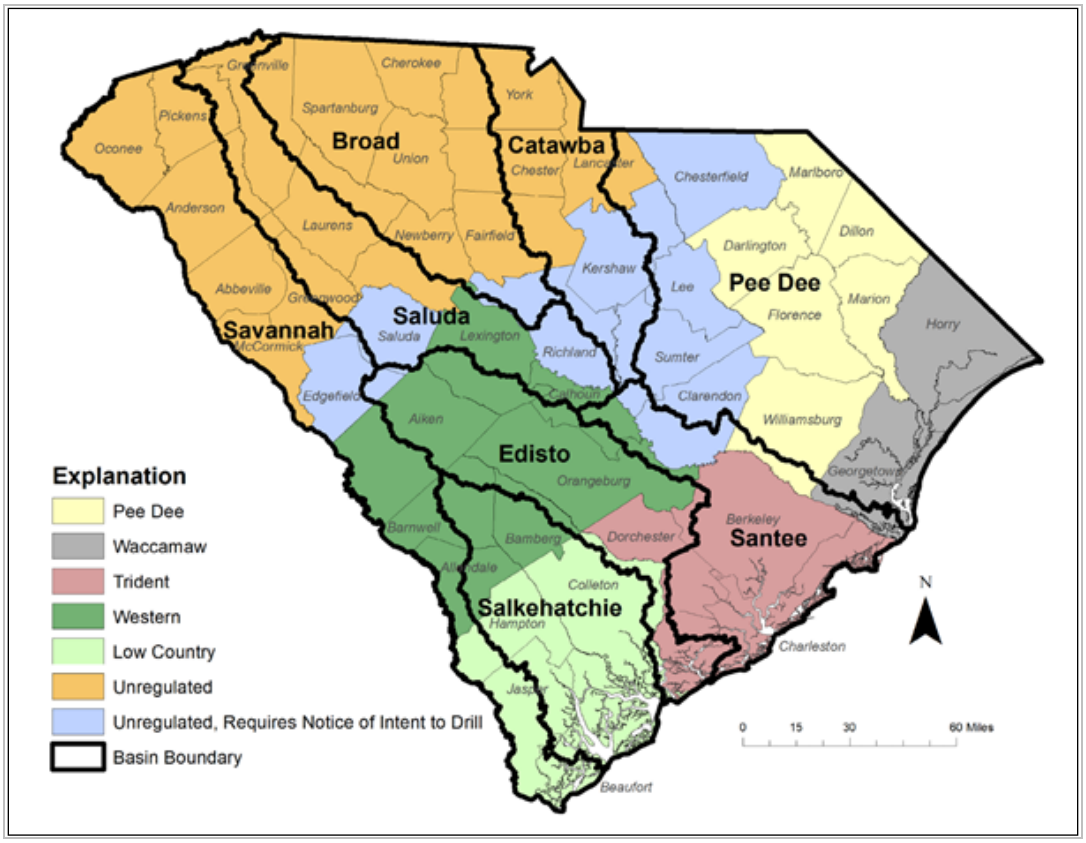


Figure 1. South Carolina river systems defined by river basin boundaries

(https://www.clemson.edu/public/water-assessment/).

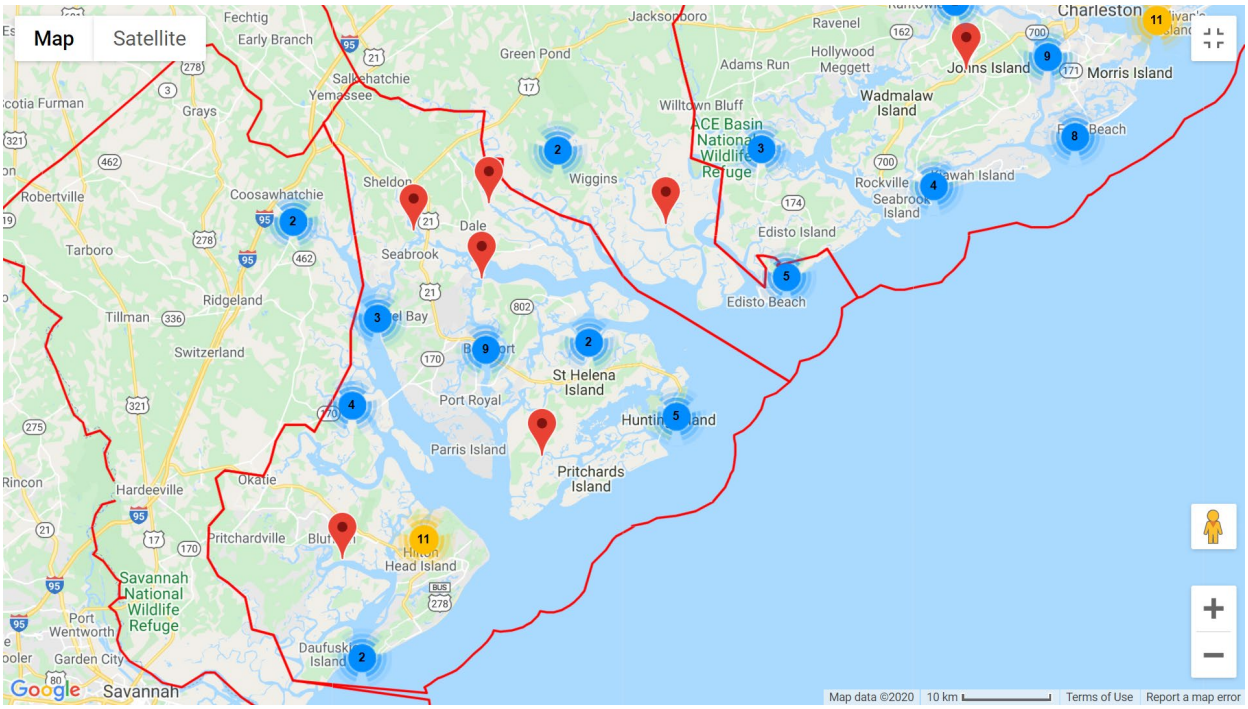


Figure 2. Example of MRIP creel sampling sites for ACE Basin and Savannah watersheds. Note: All 144 sites not shown in this figure, use interactive web tool provided at NOAA webpage.

https://www.st.nmfs.noaa.gov/msd/html/siteRegister.jsp

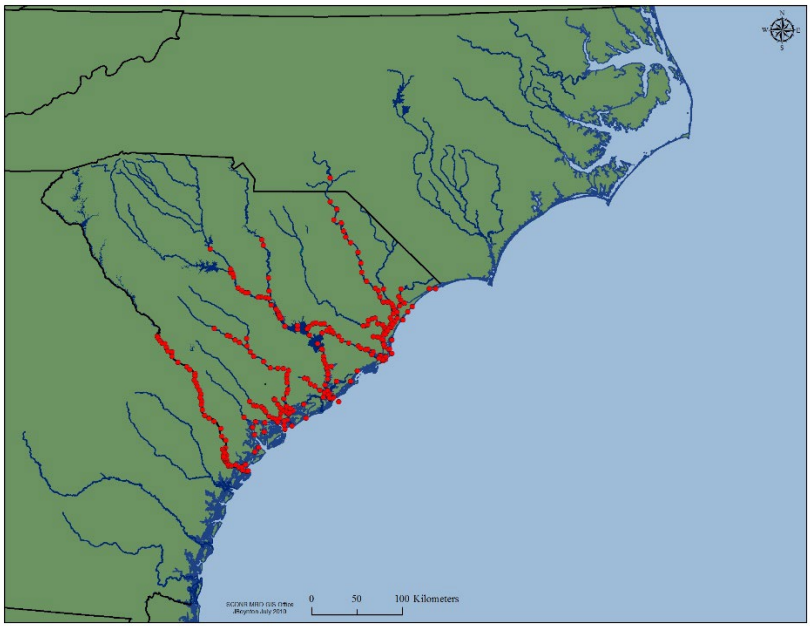


Figure 3. SC's ultrasonic telemetry array.

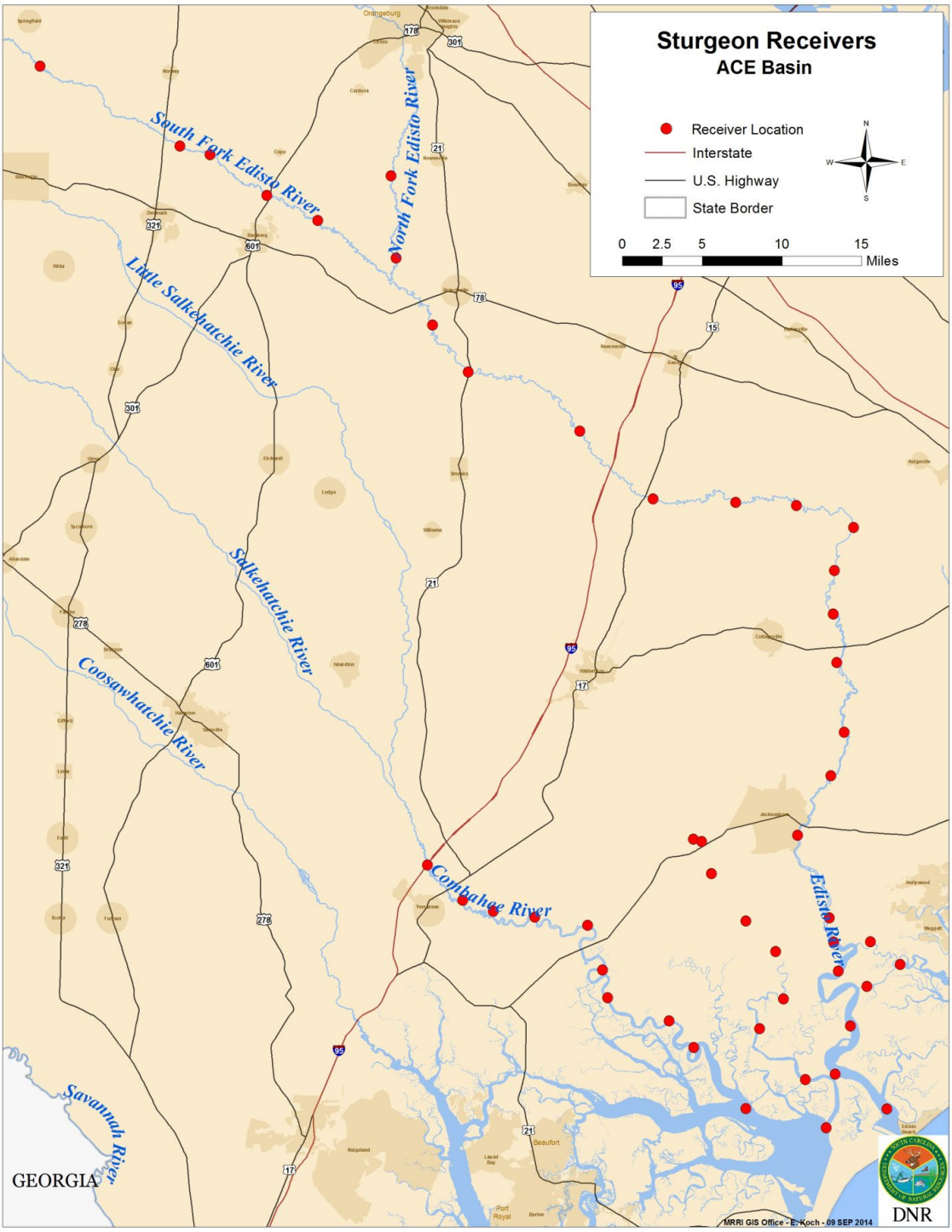


Figure 4. Receiver location in the ACE Basin Rivers.

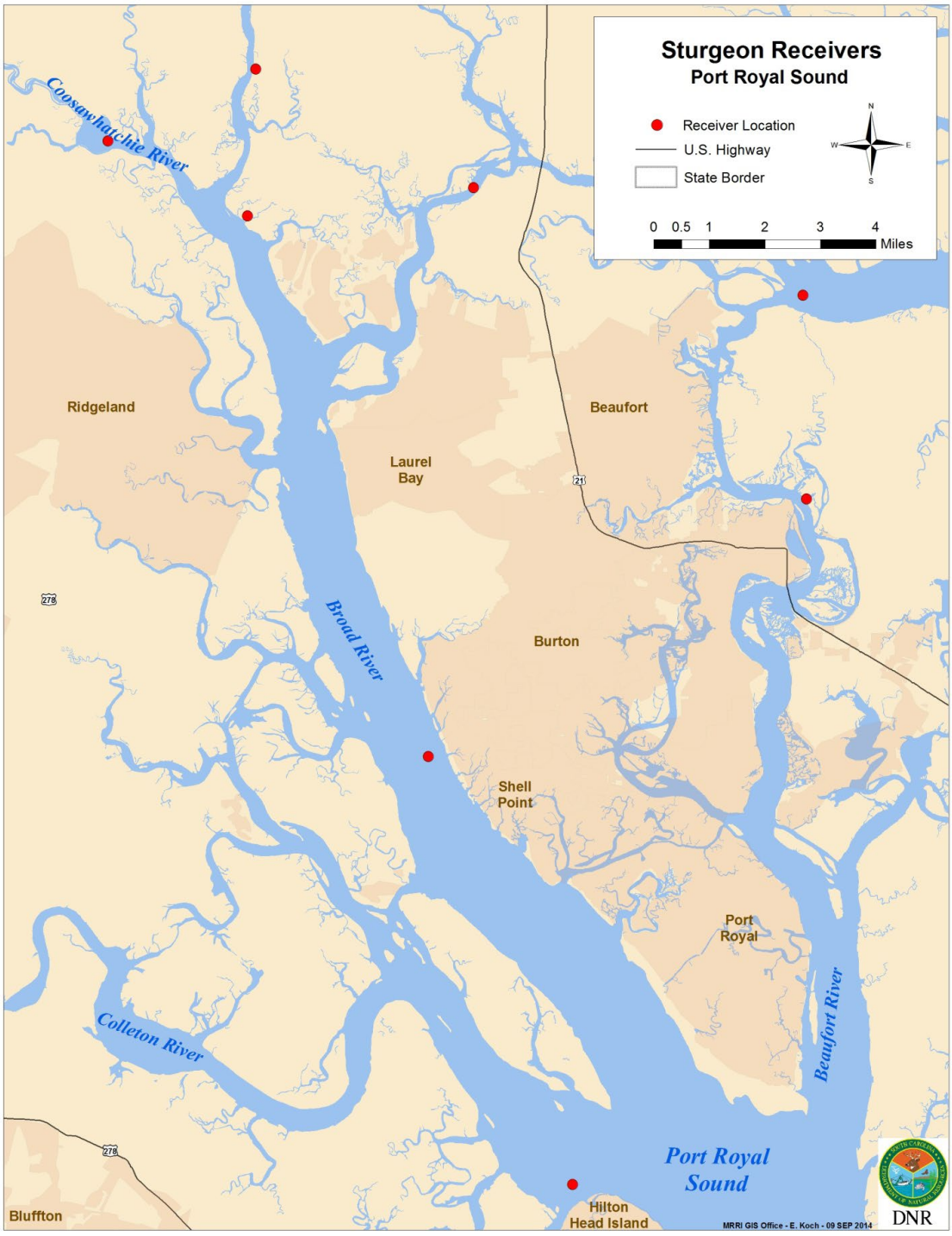


Figure 5. Receiver location in the Port Royal and Coosawhatchie River.

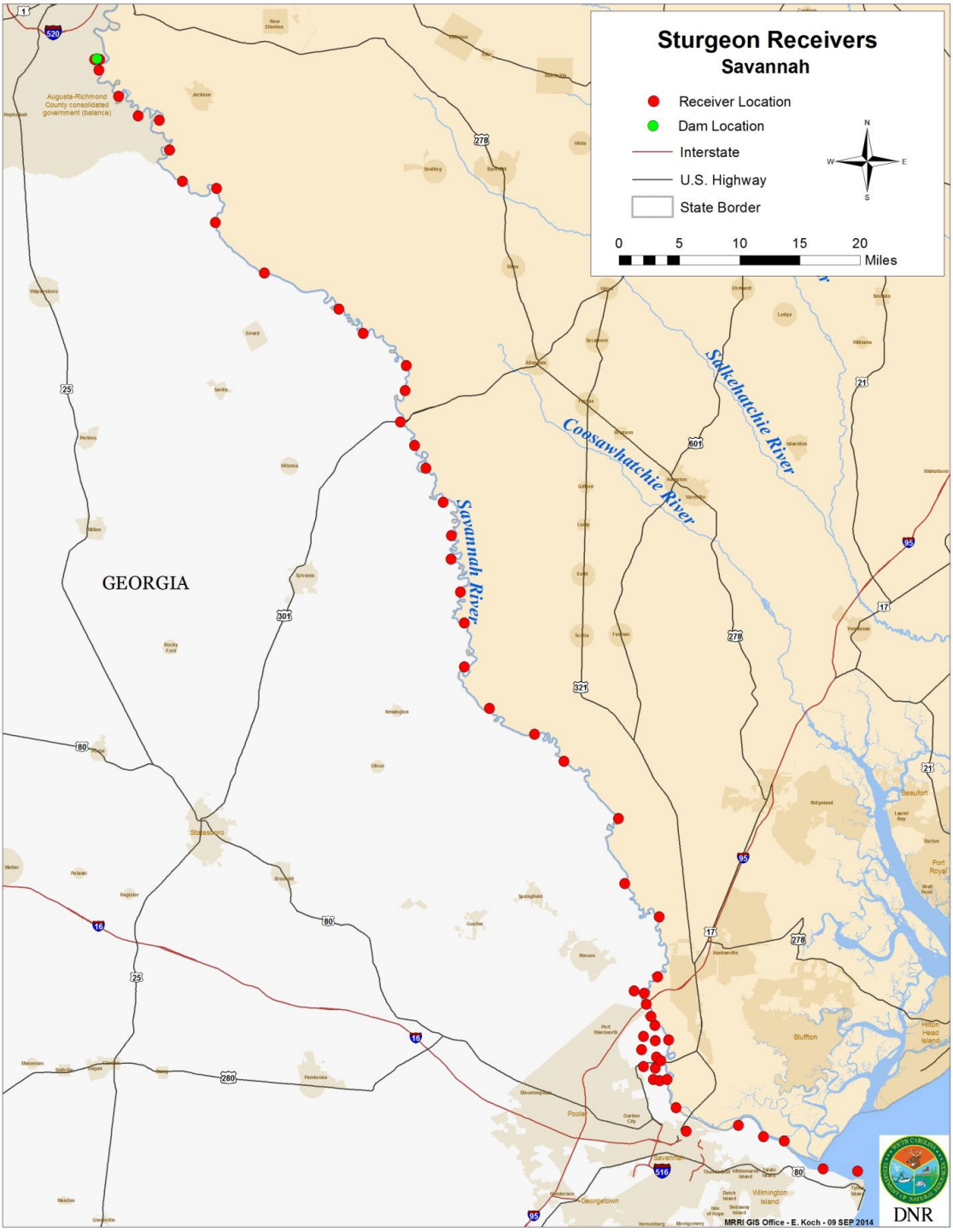


Figure 6. Receiver location in the Savannah River System.

State of Maine American Shad Sustainable Fishery Management Plan

Draft Maine SFMP Update for ASMFC Review

Draft Update Submitted by the Maine Department of Marine Resources to the Atlantic States Marine Fisheries Commission September 1, 2025

1. Introduction

American shad (*Alosa sapidissima*) in Maine state waters are jointly managed by the Atlantic States Marine Fisheries Commission (ASMFC) and the State of Maine. In 2010 the Atlantic States Marine Fisheries Commission Shad and River Herring Management Board adopted Amendment 3 to the American Shad and River Herring Management Plan, providing the most recent guidance for Atlantic Coast states. Amendment 3 was created in response to continued coastwide concerns over declines of American shad populations. Amendment 3 closed all commercial and recreational fishing for American shad along the East Coast starting in January 2013 unless individual states developed an ASMFC approved sustainable fisheries management plan for American shad. States without an approved sustainable fisheries management plan are restricted to catch-and-release fishing for American shad.

2. Regulatory History

Historically, American shad were abundant throughout Maine's coastal rivers and streams, providing a key subsistence resource for Indigenous communities and a significant economic fishery for early European settlers. As directed shad fisheries expanded, state fishery managers implemented a series of regulatory measures to control commercial and recreational harvest. From the late 1800s through the 1940s, most regulations focused on the principal commercial shad fisheries in the Kennebec and Androscoggin rivers and in Merrymeeting Bay, with additional river-specific harvest restrictions applied to several smaller coastal systems.

Management measures included minimum mesh-size and lead-length requirements for gill net and tidal weir operations, as well as seasonal closures designed to increase escapement of spawning adults to upstream habitats. Despite these controls, by the end of the 1940s a combination of water pollution, extensive dam construction, and overfishing had reduced shad abundance to levels that rendered directed commercial harvest economically unviable. Since that time, American shad landings in Maine have occurred primarily as incidental catch in nearshore Atlantic Herring and offshore groundfish fisheries within the Gulf of Maine.

3. Current Regulations

Effective May 19, 1998, the Maine Department of Marine Resources (MDMR) closed all state waters to commercial fishing for American shad. The closure remains in effect to protect depleted stocks and support potential rebuilding efforts. In conjunction with the commercial closure, the State of Maine established a daily recreational limit of two American shad per angler, effective May 1998. Recreational shad fishing is restricted to hook-and-line gear with a single hook. These recreational regulations have remained unchanged since their implementation.

Although hickory shad (*Alosa mediocris*) may occur in Maine's coastal waters, no confirmed catches have been reported in the commercial or recreational fisheries, nor in state sponsored semi-annual trawl surveys conducted in Maine and New Hampshire, for several years. Since the initiation of

mandatory dealer and harvester reporting requirements in 1996, only one commercial trip has reported landings of hickory shad, consisting of two fish caught in 1999.

4. Status of the Stocks

Prior to 1998, American shad populations in Maine were virtually eliminated from most rivers due to main stem dams without adequate upstream passage, widespread pollution, and habitat loss. Following the collapse of shad populations, and before restoration projects began in 1984, American shad were most frequently observed in Maine as incidental catches—either by recreational anglers targeting Atlantic salmon in inland waters or in commercial Gulf of Maine fisheries for groundfish and Atlantic herring.

The reemergence of shad in Maine rivers coincided with the implementation of a comprehensive restoration program. Key strategies included trap-and-truck transfers of prespawn adults from other states, release of hatchery-reared fish from both native and imported broodstock, and continued improvements to upstream and downstream fish passage. Dam removals on Maine's largest rivers further expanded accessible habitat. Collectively, these efforts have supported the rebuilding of native shad populations.

Statewide, 23 rivers have been identified as supporting American shad habitat, totaling more than 2,545 river kilometers. Currently, approximately 1,611 kilometers are accessible for upstream passage, while more than 810 kilometers of historical habitat remain inaccessible due to barriers (Figure 1; Table 1). Of the accessible habitat, a significant portion lies upstream of dams with fishways that may provide only limited passage efficiency. For management purposes, it is assumed that the mapped habitat supports both adult and juvenile life stages. Adult shad numbers in Maine are increasing as a result of extensive restoration efforts on the main stems of the state's largest rivers (Table 2). However, returns remain low compared to historic levels that once sustained large commercial fisheries.

Today, recreational fishing for American shad in Maine is limited and largely confined to river reaches below main stem dams. Six rivers—the Androscoggin, Saco, Mousam, Kennebec, Penobscot, and Narraguagus—account for most of the recreational fishing activity. While shad are documented in these systems by anglers, population sizes remain poorly quantified, with the only consistent data provided by fish passage counts at dams. These rivers range in size from small coastal systems (e.g., Mousam) to large, complex watersheds (e.g., Kennebec and Penobscot). The Kennebec, Penobscot, and Saco rivers currently provide the most productive recreational shad fisheries. Except for the Narraguagus and the upper reaches of the Kennebec and Penobscot, these rivers are monitored through the NOAA Marine Recreational Information Program (MRIP). MRIP data collected between 1996 and 2024 supports biologists' observations that the proportion of recreational anglers targeting shad is very low, and harvest levels are almost nonexistent (Tables 3 & 4; Figure 2).

Statewide Landings

Commercial fishing for American shad is currently prohibited in Maine waters. Historically, commercial shad fisheries played an important role in providing both food and employment in the lower reaches of Maine's larger coastal river systems. However, as in many other Atlantic coast states, overfishing, water pollution and the construction of dams without effective fish passage greatly reduced shad abundance. Inadequate or ineffective fishways further restricted upstream access, leading to population declines severe enough that commercial harvest was no longer viable.

Effective May 1998, the Maine Department of Marine Resources closed all state waters to commercial fishing for American shad. Since that closure, landings in Maine have occurred almost exclusively as bycatch in the federal groundfish gillnet fishery operating offshore. With subsequent changes in the groundfish fishery, reported landings of American shad in Maine ports have declined to near zero (Tables 5 & 6).

Passage

Barriers to migration remain the primary impediment to American shad accessing suitable spawning habitat in Maine rivers. Of the 23 rivers with historical or current shad populations, 18 are obstructed by at least one main stem dam, and five of these rivers have no fish passage capacity. As early as 1951, Taylor documented the decline of several Maine shad populations and identified dams as a principal cause. Dams continue to represent a major threat to shad restoration and recovery efforts.

Although fish passage facilities exist at some dams, upstream habitat utilization remains far lower than habitat use downstream of these barriers. For example, video monitoring in 2011 below the Brunswick Dam fishway on the Androscoggin River recorded more than 16,000 shad below the structure, while no individuals were passed through the vertical slot fishway (J. Lichter, Bowdoin College, pers. comm.). Similar results have been documented at other dams, including facilities with modern passage technology.

Most dams with fish passage on shad rivers in Maine employ either fish lifts or Denil fishways. Denil fishways have demonstrated relatively high passage potential (Slatick and Basham 1985; Haro et al. 1999), but their effectiveness can be limited by shad's difficulty locating entrances at large main stem dams. Spillways with uncontrolled attraction flows often divert fish away from fishway entrances.

Newer passage facilities on Maine's major rivers typically use fish lifts. Their effectiveness for shad is considered low to moderate, depending on design and operation. Shad often fail to locate fish lift entrances due to competing attraction flows along adjacent spillways. In some cases, shad appear to congregate in holding areas below the fish lift without ascending into the headpond, as confirmed during periodic dewatering of these facilities.

Management History

Fisheries managers have historically employed a range of regulatory tools to manage American shad in Maine, including gear restrictions, seasonal closures, and catch limits. Many of these measures applied to commercial fisheries in the Kennebec, Androscoggin, and Merrymeeting Bay complex

from the late 1800s through the 1940s. Additional river-specific harvest regulations were also implemented in several smaller coastal rivers. Seasonal closures were designed to improve escapement of spawning adults as populations began to decline.

By the late 1940s, however, a combination of overfishing and degraded water quality from industrial and municipal pollution had severely depleted shad populations in most coastal rivers. Commercial shad fishing was no longer economically viable, and subsequent landings were largely limited to bycatch from Atlantic herring and groundfish fisheries in offshore waters.

Between the 1940s and mid-1980s, the State of Maine largely relied on passive management of shad populations. Management approaches began to shift in the 1980s as water quality improved under the Clean Water Act and fish passage became a requirement for relicensing hydropower projects in Maine. In anticipation of improved habitat conditions and restored access, the State initiated a more active management strategy. These actions included trap-and-transfer of adult shad from both in-state and out-of-state sources, as well as the first use of hatchery propagation to produce juvenile shad for release into targeted river systems identified for restoration.

Restoration Efforts

In addition to improving upstream and downstream passage and removing dams on several Maine rivers, the State has implemented a suite of active restoration strategies aimed at recovering American shad. The Maine Department of Marine Resources (DMR) initiated adult stocking and hatchery programs in anticipation of the removal of Edwards Dam in Augusta and in conjunction with the construction of a new fishway at the Brunswick hydropower dam on the Androscoggin River.

Restoration strategies have included transporting prespawn adults above existing barriers to increase access to historical spawning grounds, as well as stocking larvae into river systems that historically supported American shad. These efforts were designed to accelerate recolonization and rebuild populations in advance of expanded habitat access provided by fish passage improvements and dam removals.

Adult stocking

Active American shad restoration in Maine began in 1985 with the stocking of prespawn adults into the Androscoggin River. During the first two years of the program, adult shad were collected from the Cathance River (ME) and the Merrimack River (MA) and released above the Brunswick Hydropower Project. Beginning in 1988, adults were obtained from the Connecticut River (Holyoke fish lift), the Merrimack River (Lowell, MA), and from returning native shad in the Androscoggin River. These fish were released into the Androscoggin above the Brunswick Dam. Adult transfers from out-of-state sources occurred annually with the exception of 1998, 2000, 2001, 2005, and 2006. The program was discontinued in 2009 due to limited funding and reduced availability of broodstock from other states. Given the cost and the status of coastwide shad runs, the adult transfer program is not expected to resume.

Restoration efforts on the Kennebec River began in 1987 with the stocking of small numbers of prespawn adults obtained from Maine rivers. From 1988 through 1997, adults were collected at the Holyoke fish lift on the Connecticut River and released into the Kennebec River above Augusta.

In total, adult shad were stocked directly into Maine rivers for 15 years. In 2009, the Maine Department of Marine Resources shifted its strategy away from adult transfers and toward the production and release of marked hatchery larvae to support restoration goals (Table 7).

Larval stocking

From 1992 to 2008, American shad larvae were reared at the Waldoboro Shad Hatchery using eggs collected from adults captured in the Kennebec, Connecticut, Androscoggin, Merrimack, Saco, and Sebasticook rivers. Beginning in 1993, eggs from Connecticut River adults were transported to Waldoboro, cultured for up to 21 days, and released as larvae into the Kennebec River and its tributary, the Sebasticook River. Starting in 1998, prespawn adults from the Connecticut and Merrimack rivers were transported to Waldoboro and held as broodstock in a tank-spawning system.

All hatchery-reared larvae were "marked" prior to release by immersion in an oxytetracycline (OTC) bath to allow for subsequent identification. Larvae were stocked at multiple sites, including reaches of the Androscoggin, Kennebec, and Sebasticook rivers (both above and below dams), as well as presumed spawning habitats in the Medomak River and in tidal waters of the Saco River below the main stem dam.

To evaluate the effectiveness of the hatchery program, adult shad otoliths were collected from mortalities at fish passage facilities, juveniles captured in beach seine surveys, and samples voluntarily submitted by anglers. Since 2012, otoliths have also been collected from a subsample of shad caught during the Maine DMR inshore trawl survey. While it is difficult to directly quantify the statewide success of the hatchery program, juvenile abundance in the Kennebec–Androscoggin system increased during the years concurrent with larval stocking.

The Waldoboro facility closed in 2009 due to funding limitations, lack of broodstock availability, and broader shifts in coastwide management priorities for American shad. At present, there are no plans to reopen the hatchery.

Current Action and Progress

During the Federal Energy Regulatory Commission (FERC) relicensing process, the Maine Department of Marine Resources (MDMR), in collaboration with federal partners, advocates for the design and operation of fish passage structures that provide the highest possible passage efficiency for all diadromous species, including American shad. Beyond the FERC process, MDMR also reviews and comments on construction projects statewide that may affect known or potential shad habitat. The Department continues to work with both public and private landowners to install new fishways or upgrade existing passage facilities to maximize connectivity across river systems.

American shad in Maine are monitored annually through four ongoing programs that collectively provide information across multiple habitats and life stages:

- **Fishway Monitoring:** Evaluates upstream passage of adult shad at major hydropower dams and fishways.
- **Juvenile Beach Seine Survey:** Provides indices of juvenile abundance in nursery habitats.

- **Maine–New Hampshire Inshore Trawl Survey:** Collects data on age, growth, and distribution of shad in marine waters; provides a fisheries-independent index of abundance.
- **Recreational Fisheries (MRIP) Survey:** Provides limited, fisheries-dependent data on harvest and catch.

Three of these programs—fishway counts, seine surveys, and trawl surveys—are considered fisheries independent, while the MRIP program is the primary fisheries dependent data source. Other available fisheries dependent information is restricted to historical commercial landings, historic tag-return records, and anecdotal angler reports.

Coverage and sampling of American shad in the MRIP survey are highly variable, with consistently low numbers of individuals recorded (Tables 3 and 4). Consequently, MRIP results are of limited use for population assessment.

1. Fishery-Dependent Data Sources

Statewide

Early commercial landings of American shad in Maine remained relatively stable at around 445,000 kg annually between 1887 and 1911 (Table 8; Figure 3). The river of origin for these fish is unknown, although research indicates that they most likely originated from several different river systems.

Landings peaked in 1912 at 1,495,066 kg, followed by a sharp decline. Between 1928 and 1933, landings averaged 51,400 kg and remained very low through the 1940s. A temporary recovery occurred in 1945, when landings reached 502,044 kg, but from 1948 through 1976 catches again remained at low levels.

From 1978 to 1990, landings averaged 14,369 kg, with a high of 41,096 kg in 1981 and a low of 8.1 kg in 2002. Since closure of the directed shad fishery in 1998, annual landings have been limited to bycatch of less than 200 kg. Ocean bycatch has also declined due to regulatory changes, including adoption of a 6.5-inch minimum mesh size for groundfish gill nets. Since 1950, most commercial shad catches in Maine were taken with gill nets (Table 5). At present, there is no directed commercial fishery for shad in Maine waters, and any fish landed occur as incidental catch in other commercial fisheries.

Flagg et al. (1976) estimated the historical size of Maine's shad runs using harvest changes associated with dam construction and drainage area historically available for spawning. According to Atkins (1889), completion of Edwards Dam in Augusta in 1837 resulted in a 50 percent decline in shad harvests from the lower Kennebec River. This suggests that the 8,268 square kilometers of habitat in the upper Kennebec supported half of the river's shad production.

From 1903 to 1914, the lower Kennebec yielded an average annual harvest of 308,370 kg, representing production equivalent to that from the upper drainage area. Historically, approximately 33,280 square kilometers of drainage area across Maine was accessible to shad, out of 64,200 square kilometers draining to Maine's coastal waters. Based on Kennebec production, this statewide habitat could have generated an annual yield of 1,215,000 kg of Maine-origin fish.

Assuming harvest rates of 30 to 80 percent of the total run, similar to shad fisheries in southern New England, the historical statewide run size is estimated at 1,518,750 to 4,050,000 kg. Using a mean weight of 1.8 kg, the total historical population would have been approximately 850,000 to 2,250,000 adult fish (Flagg et al. 1976).

Merrymeeting Bay Complex

Fishery dependent data for the Merrymeeting Bay Complex is limited to historical records. Evidence suggests that a combination of overfishing, pollution, and habitat loss from dam construction, beginning during the colonial period and continuing through the early 1800s, contributed to the disappearance and significant decline of American shad stocks in Maine (Flagg et al. 1976).

The directed commercial fishery for American shad was formally closed in 1998. In the same year, a recreational bag limit of two fish per day, caught by hook and line, was established statewide. The State of Maine does not conduct a recreational creel survey for American shad, nor does it survey bycatch of this species in commercial fisheries targeting other species. Available information is therefore limited to historical landings data collected from coastal and offshore fisheries, both from directed shad fisheries and from fisheries where American shad were retained as incidental catch (Tables 5, 6, 8).

2. Fishery-Independent Data Sources

Statewide

Statewide fisheries independent data for American shad are primarily limited to trap and lift counts at dams, an annual juvenile abundance index (JAI) survey, and the Maine–New Hampshire Inshore Trawl Survey (Table 2). Beyond the biological data collected during the trawl survey, there are few consistent sources of biological information for this species in Maine.

The Department does not collect biological data at dam passage facilities due to the low numbers of American shad returning to most trap and lift sites statewide. Biological data collection is therefore limited to mortalities that occur during passage or transport operations.

Merrymeeting Bay Complex (JAI Survey)

The Maine Department of Marine Resources initiated annual sampling of age-0 American shad in 1979 at 14 sites in the Merrymeeting Bay Complex (Figure 4). Sampling locations included four sites on the lower tidal Kennebec River, three on the lower Androscoggin River, four within Merrymeeting Bay, and one each on the Eastern, Cathance, and Abagadasset rivers. In 2000, eight additional sites were established on the Kennebec River upstream of the former Edwards Dam (Figure 5). Site 8A was later abandoned due to habitat alteration associated with bridge construction.

Sampling occurs once every two weeks from July 1 through October 1. Field crews use a beach seine within three hours of low water. From 1979 through 1982, the seine measured 9 meters in length, 1.8 meters in depth, and was constructed with 3.2 mm stretched nylon mesh. Beginning in 1983, gear specifications were standardized to a 17-meter long, 1.8-meter deep net of 6.4 mm stretch nylon mesh with a 1.8 x 1.8-meter bag at the center.

During each haul, one end of the seine is held stationary at the shoreline while the other end is deployed from a boat and towed perpendicular to shore. The distal end is then swept in an arc upriver and pulled back to shore, sampling an area of approximately 220 square meters. All samples are sorted and processed in the field. Alosines are counted and measured, and up to 50 individuals of other species are measured to the nearest millimeter. Catch-per-unit-effort (CPUE) is calculated as the number of individuals per seine haul.

Juvenile shad from the lower Kennebec, Androscoggin, Eastern, Cathance, and Abagadasset rivers and Merrymeeting Bay are assumed to move freely among systems. Data from these areas are therefore pooled, and annual arithmetic and geometric means are calculated (Table 9). Data from the upper Kennebec River, above the site of the former Edwards Dam, are analyzed separately (Table 10).

Results from the Merrymeeting Bay Complex indicate that annual geometric means of age-0 American shad were relatively high during the 1980s, declined through the 1990s, and increased until 2010 (Figure 6). Since 2010, abundance has generally decreased, except for peaks observed in 2013, 2014, and 2017. Since 2020 the geometric means have increased, with a significant increase between 2020 and 2021. On the upper Kennebec River, geometric mean CPUE values were high from 2004 through 2008 (Figure 7) but declined significantly from 2009 to 2018. Reduced sampling effort since 2012, with fewer than 32 seine hauls per season, was partly due to low water levels limiting site access. However, low numbers of juveniles are being captured above the location where the Edwards Dam was removed in 1999. This may be due to preferred habitat below the old dam site which was located at the head-of-tide or the discontinuation of the stocking program or combination of the two.

Comparisons were made to assess the effects of dam removal, larval stocking, and potential increases in adult returns observed at trap facilities. Analyses examined the relationship between juvenile abundance and lagged adult returns over a five- to six-year period (1984–2018). In addition, the numbers of stocked larvae were compared to JAI indices for the period 1992–2008, with particular focus on contributions of OTC-marked hatchery larvae. Results demonstrated a positive relationship between the number of larvae stocked and subsequent juvenile captures during the JAI survey.

Maine-New Hampshire Trawl Survey

The Maine-New Hampshire Inshore Groundfish Trawl Survey is a fisheries-independent assessment of coastal fishery resources in Maine and New Hampshire. The survey was developed to address critical data gaps affecting management of coastal fisheries. It provides biological, environmental, and seasonal distribution data for both commercial and non-commercial fish species. The survey began in fall 2000 with a primary focus on groundfish abundance, but its scope has since expanded to include a broader suite of species.

Sampling is conducted each spring and fall at 120 stations stratified among five coastal regions (Figure 8). The regions were delineated based on geologic, oceanographic, geographic, and biological characteristics. Within each region, stations are distributed across four depth strata: 5–20 fathoms, 21–35 fathoms, 36–55 fathoms, and greater than 55 fathoms. Station locations are selected randomly to provide representative sampling within each stratum.

The gear consists of a modified shrimp trawl with 2-inch mesh wings and a ¼-inch mesh liner in the cod end. The foot rope measures 57 feet, the head rope 70 feet, and the rig includes 6-inch rubber cookies. The net was designed to minimize bottom contact and habitat disturbance. All shad captured at each of the 120 stations are counted, weighed, and measured for fork length to the nearest centimeter.

Survey results indicate that the highest catch rates of older juvenile American shad in coastal waters occur in Regions 1 and 2, which encompass the mouths of the Saco and Kennebec rivers. Arithmetic mean catches per trawl were typically greater in the fall than in the spring, reflecting the downstream migration of juveniles during autumn, but since 2016 the spring surveys have captured more American shad (Tables 11 and 12). During eight of the last nine years, spring surveys have yielded higher mean catches and greater consistency than fall surveys (Figure 9).

The proportion of tows capturing American shad has increased over the time series, indicating greater spatial occurrence in coastal waters (Figure 10). Captured individuals ranged from 7 to 49 cm fork length, with mean sizes between 15 and 20 cm (Table 13). Based on age-length relationships from the Hudson River (Stira 1976), these fish are estimated to be one to two years old. Trawl survey data further suggest an overall increase in the length and weight of American shad since survey inception.

Although both spring and fall surveys recorded captures, stratified mean catches remained below 20 fish per tow for both seasons (Figures 11 and 12). Nonetheless, the increasing trend in captures, size, and distribution of American shad in the coastal zone provides valuable information on population dynamics and complements riverine monitoring programs.

Proposed fisheries to stay open

This plan proposes to maintain a statewide 2 fish creel limit for American shad. The 2 fish recreational limit with existing gear restrictions has been in effect since May 19, 1998.

Sustainability Targets

A. Definition

A sustainable American shad fishery will not diminish future stock reproduction and recruitment of American shad in Maine.

B. Methods for Monitoring Stock

The Maine Department of Marine Resources proposes to integrate adult run count data (Figure 13) with juvenile abundance index (JAI) data from the Merrymeeting Bay Complex (Figure 14). Both datasets are fisheries-independent and represent the primary production areas for American shad in Maine. Together, these sources provide a measure of juvenile production and adult escapement, as well as information on upstream passage counts statewide. This combined approach is intended to strengthen the assessment of population status and trends by linking juvenile production with subsequent adult returns.

Fishery Independent Data

Juvenile Abundance Index (JAI) data are available for the period 1979 through 2024 and provide a long-term measure of juvenile American shad production in Merrymeeting Bay and its six tributary rivers. The 25th percentile of this time series will serve as a reference point for evaluating recruitment levels. When values fall below this threshold, the Department will review existing management measures and consider adjustments, including changes to the recreational creel limit.

Trap counts of American shad at the first mainstem dam equipped with a fishway and counting facility will be used as a secondary metric of adult escapement. The 25th percentile of the aggregate counts will be compared against the JAI to provide additional information on spawning stock size. Because substantial spawning habitat occurs below certain mainstem dams and fishway passage efficiency is variable, trap counts will be applied in a supporting role rather than as a primary management indicator.

Timeframe

The proposed benchmarks will be implemented as soon as they are reviewed by the American Shad and River Herring Technical Committee and approved by the Management Board.

Proposed Regulation Modifications to Support Targets

No changes are proposed to the existing recreational or commercial fish rules in effect as of May 1998, which prohibits commercial fishing for American shad and established a 2-fish recreational creel limit.

Enforcement

Enforcement of regulations related to American shad is shared between the Maine Marine Patrol and the Maine Warden Service within their respective jurisdictions. The Department of Marine Resources maintains coordination with regional field offices of both agencies to address enforcement priorities and ensure compliance with state regulations. Joint enforcement actions are undertaken as needed to protect American shad resources and to support management objectives.

C. Adaptive Management

Evaluation Schedule

Run count and juvenile abundance index (JAI) data will be reviewed on an annual basis and incorporated into their respective time series to provide updated metric values. Management triggers based on the 25th percentile are fixed at the values specified in the table of American Shad Management Triggers. These triggers will be re-evaluated and updated at five-year intervals as part of the state's review and revision of American Shad Sustainable Fishery Management Plans (SFMPs). Updated annual metric values will be reported in the Shad and

River Herring Compliance Report, which is submitted to the Shad and River Herring Technical Committee by July 1 each year.

Consequence or Control Rules

If for three consecutive years either the JAI survey or one or more trap counts fall below the 25th percentile, the American shad harvest will be reduced to a one-fish bag limit, or a defined fishing season will be implemented to reduce effort to an equivalent level.

If for three consecutive years both the JAI survey and one or more trap counts fall below the 25th percentile, the American shad fishery will be closed to harvest and will remain open only for catch-and-release fishing.

American Shad Management Triggers

Index	25-Percentile
JAI Series (1984 - 2024)	0.26 (2018 was 0.23)
Mean Fishway Counts (1990 - 2024)	431 (2018 was 372)
Total Fishway Counts (1990 - 2024)	884 (2018 was 795.1)

Potential Future Benchmarks

The American shad stock assessment may provide recommendations for additional monitoring and assessment methods at the statewide level. As populations increase, biological sampling may be expanded to include the collection and aging of scales for the estimation of mortality, as well as the development of other indices reviewed and approved by the Stock Assessment Review Committee (SARC) or the Technical Committee.

Tables

Table 1. Amount of American shad habitat (river kilometers) in Maine waters (USFWS 1983). Rivers are listed in order of descending habitat kilometers.

River/Watershed	Current (though may be limited)	Current Assumed	Historical	Historical Assumed	Uncertain	Total
Penobscot Watershed	399.6		354.0	32.7		786.3
Kennebec Watershed	300.4		107.2			407.6
Salmon Falls/Piscataqua River	59.8	8.1	8.9	108.1		184.9
Sheepscot River	178.8					178.8
Narraguagus River	38.9			35.6	60.4	134.9
Royal River	106.2					106.2
Androscoggin River	48.3		17.4	34.8		100.5
Saco River	49.1			50.6		99.7
East Machias River	18.8			67.0		85.7
Pleasant River	72.1					72.1
Scarborough Marsh/Nonesuch R.	70.4					70.4
St. George River	65.5					65.5
St. Croix River	61.8					61.8
Kennebunk River	47.0					47.0
Dennys River	34.8				10.7	45.5
Presumpscot River	22.0			22.2		44.2
Tunk Stream	20.2				16.8	37.1
Ducktrap River					22.8	22.8
Webhanet River	8.9					8.9
Union River	7.9					7.9
Pennamaquan River					7.6	7.6
Mousam River	6.3					6.3
Little River	5.5					5.5
Grand Total	**1622.3**	**8.1**	**487.5**	**351.0**	**118.2**	**2587.2**

Table 2. Upstream passage of American shad over the lowermost dam on the Androscoggin, Saco, Kennebec, Sebasticook and Penobscot rivers 1990 – 2024.

	American Shad				
Year	**Androscoggin**	**Saco**	**Kennebec**	**Sebasticook**	**Penobscot**
1990	1				
1991	0				
1992	0				
1993	1	882			
1994	1	399			
1995	3	580			
1996	2	837			
1997	2	1,104			
1998	5	1,374			
1999	87	4,994			
2000	88	1,323			
2001	26	2,570			
2002	11	1,014			
2003	7	1,227			
2004	12	1,627			
2005	0	744			
2006	3	883	0		
2007	6	1,428	18		
2008	1	1,491	0		
2009	0	278	0	8	
2010	22	3,663	39	2	
2011	0	3,338	12	54	
2012	11	6,419	5	163	
2013	14	6,171	0	114	
2014	0	2,580	1	26	809
2015	58	6,171	26	47	1,806
2016	1,096	16,926	830	18	7,862
2017	1	3,727	213	64	3,868
2018	32	4,107	437	26	3,958
2019	63	1,139	44	114	2,489
2020	23	5,417	180	9	11,233
2021	550	2,583	92	7	11,578
2022	228	1,109	0	9	7,582
2023	14	1,176	1	2	4,154
2024	91	79	23	5	10,764

Table 3. Query of MRIP data collected from Maine waters 1996 – 2024.

Year	Interviews	Anglers that Caught Shad	Total Shad Catch	Harvest
1996	1,146	2	3	0
1997	1,185	0	0	0
1998	1,528	2	2	1
1999	1,688	2	2	1
2000	1,539	2	2	1
2001	2,347	3	4	0
2002	2,002	1	1	0
2003	1,601	1	1	0
2004	1,369	2	3	0
2005	1,350	0	0	0
2006	1,292	3	6	1
2007	1,788	4	5	0
2008	1,510	5	12	1
2009	1,383	6	43	2
2010	1,440	7	11	0
2011	1,495	6	34	0
2012	1,569	6	50	0
2013	1,277	2	3	0
2014	1,770	4	6	4
2015	1,395	16	69	7
2016	1,549	28	90	10
2017	1,695	8	31	2
2018	1,444	7	17	3
2019	1,579	14	124	0
2020	1,172	0	0	0
2021	1,299	3	4	0
2022	1,201	2	4	2
2023	1,447	4	6	1
2024	1,669	6	8	2

Table 4. Expanded American shad catch, harvest and percent standard error (PSE) for Maine waters.

Year	Total Catch	Catch PSE	Total Harvest	Harvest PSE
1987	84,458	58.4	84,458	58.4
1992	1,149	70.7	574	100
1996	1,170	77.1	0	-
1998	461	70.5	231	99.5
1999	1,065	74.2	701	100
2000	1,137	70.7	552	100
2001	1,661	59	0	-
2002	438	100	0	-
2003	1,367	100	0	-
2004	1,545	100	0	-
2005	1,244	100	0	-
2006	8,566	74.8	1,428	100
2007	4,480	84	0	-
2008	4,812	66.9	303	98.2
2009	19,095	59.3	843	72.9
2010	9,423	66.2	0	-
2011	4,295	60.6	0	-
2012	17,620	67	0	-
2013	945	93	0	-
2014	779	97.6	779	97.6
2015	779	97.6	779	97.6
2016	8,870	52.2	1,740	88.1
2017	1,974	64.6	261	98.1
2018	45,146	83.2	4,108	90.8
2019	92,081	76.0	0	-
2020	59	102.6	0	-
2021	7,466	72.8	0	-
2022	5,611	71.0	3,346	104.9
2023	4,134	68.6	500	102.6
2024	15,495	69.9	610	103.0

Table 5. Reported commercial landings (Lbs.) of American shad in Maine by gear.

Year	Gill Net	Trawl	Other	Total	Year	Gill Net	Trawl	Other	Total
1950	2,300	0	100	**2,400**	**1987**	21,100	5,400	0	**26,500**
1951	47,400	100	28,700	**76,200**	**1988**	29,000	2,600	0	**31,600**
1952	50,200	0	300	**50,500**	**1989**	45,100	1,500	0	**46,600**
1953	27,000	100	0	**27,100**	**1990**	11,046	758	0	**11,804**
1954	1,800	200	0	**2,000**	**1991**	1,727	264	0	**1,991**
1955	6,500	100	0	**6,600**	**1992**	1,085	362	0	**1,447**
1956	1,900	100	0	**2,000**	**1993**	687	115	0	**802**
1957	6,800	700	100	**7,600**	**1994**	972	79	0	**1,051**
1958	10,000	100	0	**10,100**	**1995**	365	17	0	**382**
1959	1,600	0	0	**1,600**	**1996**	976	94	0	**1,070**
1960	300	0	0	**300**	**1997**	110	84	0	**194**
1961	0	0	0	**0**	**1998**	96	328	0	**424**
1962	100	0	0	**100**	**1999**	132	33	4	**169**
1963	0	0	0	**0**	**2000**	214	77	0	**291**
1964	0	0	0	**0**	**2001**	425	51	0	**476**
1965	0	0	0	**0**	**2002**	6	12	0	**18**
1966	0	2,100	0	**2,100**	**2003**	0	4	0	**4**
1967	0	100	0	**100**	**2004**	8	0	0	**8**
1968	0	0	2,300	**2,300**	**2005**	0	53	0	**53**
1969	0	0	0	**0**	**2006**	663	24	24	**711**
1970	0	0	0	**0**	**2007**	580	7	199	**786**
1971	0	0	0	**0**	**2008**	20	18	0	**38**
1972	0	0	0	**0**	**2009**	2,075	0	0	**2,075**
1973	0	0	0	**0**	**2010**	55	217	0	**272**
1974	400	100	0	**500**	**2011**	536	10	5	**551**
1975	34,200	200	200	**34,600**	**2012**	3	77	0	**80**
1976	14,300	400	0	**14,700**	**2013**	15	0	12	**27**
1977	21,500	600	0	**22,100**	**2014**	0	0	0	**0**
1978	24,300	200	0	**24,500**	**2015**	0	0	2	**2**
1979	18,100	300	200	**18,600**	**2016**	165	0	0	**165**
1980	27,500	500	0	**28,000**	**2017**	0	0	0	**0**
1981	88,900	1,700	0	**90,600**	**2018**	0	0	0	**0**
1982	25,100	400	300	**25,800**	**2019**	0	0	0	**0**
1983	36,500	2,200	0	**38,700**	**2020**	0	0	0	**0**
1984	31,000	2,200	100	**33,300**	**2021**	0	0	0	**0**
1985	13,400	2,600	0	**16,000**	**2022**	0	0	0	**0**
1986	21,500	1,600	0	**23,100**	**2023**	0	0	0	**0**
					2024	0	0	0	**0**

Table 7. Number of American shad larvae raised at the Waldoboro Hatchery and stocked in Maine Rivers, 1992-2024.

Year	Saco River	Medomak River	Androscoggin River	Main Stem Kennebec River	Sebasticook River	Kennebec River System
1992	0	230000	0	0	0	0
1993	0	61000	0	194400	0	194400
1994	0	30460	0	58800	0	58800
1995	0	318290	0	479612	0	479612
1996	0	327495	0	339319	320000	659319
1997	414201	208240	0	1615603	474313	2089916
1998	408575	269043	0	1381723	744163	2125886
1999	151774	17626	316967	1944712	839500	2784212
2000	259090	145900	522000	3374325	500004	3874329
2001	313560	213	308556	1496454	618879	2115333
2002	0	11143	295725	1571856	1013852	2585708
2003	0	0	1269842	5989358	1857184	7846542
2004	0	0	538613	4548947	382217	4931164
2005	0	0	96551	1105343	0	1105343
2006	0	0	0	262,131	0	262,131
2007	0	0	0	9,082,178	0	9,082,178
2008	0	0	712,286	1,396,689	288,507	1,685,196
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
	Maine discontinued its American shad hatchery program at the end of the 2008 season due to loss of funding					
Total	**1,547,200**	**1,619,410**	**4,060,540**	**34,841,450**	**7,038,619**	**41,880,069**

Table 8. Reported commercial landings of American shad from Maine state and federal waters.

Year	Pounds	Kg	Year	Pounds	Kg	Year	Pounds	Kg
1887	1,095,720	497,019	**1941**	47,800	21,682	**1983**	38,700	17,554
1888	839,256	380,687	**1942**	160,374	72,746	**1984**	33,414	15,157
1889			**1943**	360,923	163,715	**1985**	16,000	7,258
1890			**1944**	452,549	205,276	**1986**	23,012	10,438
1891			**1945**	637,620	289,224	**1987**	26,400	11,975
1892			**1946**	1,106,800	502,044	**1988**	31,881	14,461
1893			**1947**	304,395	138,074	**1989**	46,498	21,091
1894			**1948**	2,552	1,158	**1990**	11,804	5,354
1895			**1949**	4,908	2,226	**1991**	1,991	903
1896	366,738	166,352	**1950**	2,427	1,101	**1992**	1,450	658
1897			**1951**	76,164	34,548	**1993**		
1898	1,152,000	522,547	**1952**	50,450	22,884	**1994**	1,051	477
1899			**1953**	27,294	12,381	**1995**		
1900	820,400	372,133	**1954**	1,981	899	**1996**	354	161
1901	731,000	331,582	**1955**	6,570	2,980	**1997**	2222	1,008
1902	773,400	350,814	**1956**	2,011	912	**1998**	1326	601
1903	1,143,600	518,737	**1957**	7,613	3,453	**1999**	291	132
1904	1,259,400	571,264	**1958**	10,098	4,580	**2000**	87	39
1905	1,087,200	493,154	**1959**	1,635	742	**2001**	461	209
1906	470,200	213,283	**1960**	311	141	**2002**		
1907	873,400	396,174	**1961**	154	70	**2003**	54	24
1908	1,881,800	853,584	**1962**	65	29	**2004**	18	8
1909	980,350	444,687	**1963**			**2005**	159	72
1910	847,200	384,290	**1964**			**2006**	713	323
1911	1,386,400	628,871	**1965**			**2007**	399	181
1912	3,296,000	1,495,066	**1966**	2,072	940	**2008**	38	17
1913	2,088,400	947,298	**1967**	125	57	**2009**	2075	941
1914	2,086,200	946,300	**1968**	2,311	1,048	**2010**	272	123
1915			**1969**			**2011**	536	243
1928	110,149	49,964	**1970**			**2012**	80	36
1929	36,123	16,385	**1971**			**2013**	27	12.3
1930	88,635	40,205	**1972**			**2014**	0	0
1931	157,763	71,561	**1973**			**2015**	0	0
1932	107,891	48,939	**1974**	588	267	**2016**	165	75
1933	178,901	81,149	**1975**	34,669	15,726	**2017**	0	0
1934			**1976**	14,855	6,738	**2018**	0	0
1935	13,000	5,897	**1977**	22,100	10,025	**2019**	0	0
1936			**1978**	24,500	11,113	**2020**	0	0
1937	9,300	4,218	**1979**	18,600	8,437	**2021**	0	0
1938	11,900	5,398	**1980**	27,958	12,682	**2022**	0	0
1939	9,266	4,203	**1981**	90,600	41,096	**2023**	0	0
1940	32,164	14,590	**1982**	25,883	11,741	**2024**	0	0

Table 9. Mean catch-per-unit-effort of age-0 American shad from the Merrymeeting Bay complex in Maine. The complex includes Merrymeeting Bay and the lower Kennebec, Androscoggin, Eastern, Cathance, and Abagadasett rivers.

	Sample	Total	Arithmetic		Geometric	
Year	Size	Catch	Mean	SE	Mean	SE
1979	45	10	0.22	0.13	0.10	0.06
1980	57	9	0.16			
1981	58	29	0.50			
1982	59	9	0.15			
1983	53	42	0.79			
1984	45	32	0.71	0.33	0.29	0.09
1985	42	77	1.83	0.68	0.68	0.13
1986	62	32	0.52	0.21	0.22	0.06
1987	60	136	2.27	0.87	0.63	0.12
1988	100	1,377	13.77	8.88	0.52	0.11
1989	92	72	0.78	0.32	0.23	0.07
1990	98	211	2.15	0.69	0.51	0.09
1991	88	64	0.73	0.28	0.25	0.06
1992	79	62	0.78	0.31	0.26	0.07
1993	76	80	1.05	0.75	0.10	0.06
1994	93	24	0.26	0.13	0.09	0.04
1995	110	55	0.50	0.20	0.16	0.05
1996	89	111	1.25	0.92	0.21	0.06
1997	110	37	0.34	0.20	0.09	0.04
1998	112	40	0.36	0.28	0.06	0.04
1999	108	1,059	9.81	4.45	0.51	0.15
2000	111	398	3.59	2.25	0.29	0.08
2001	129	234	1.81	0.70	0.20	0.05
2002	127	316	2.49	1.23	0.45	0.07
2003	114	680	5.96	7.63	0.94	0.12
2004	105	1,356	12.91	7.09	1.02	0.13
2005	112	879	7.85	2.78	1.07	0.12
2006	120	2,148	17.90	6.66	1.75	0.14
2007	119	1,642	13.80	3.06	1.98	0.15
2008	104	680	6.54	1.56	1.59	0.13
2009	111	783	7.05	1.48	1.63	0.13
2010	114	1,547	13.57	4.15	1.66	0.14
2011	117	1,113	9.51	4.02	1.30	0.12
2012	118	1,135	9.62	5.05	1.21	0.12
2013	120	2,131	17.76	6.48	1.95	0.15
2014	120	1,300	10.83	2.91	1.53	0.13
2015	112	446	4.16	1.38	0.96	0.10
2016	116	297	2.56	0.60	0.83	0.09
2017	110	721	6.55	2.26	1.29	0.12
2018	120	248	2.07	0.56	0.59	0.08
2019	120	384	3.20	0.73	0.89	0.10
2020	120	91	0.76	0.24	0.26	0.06
2021	120	1,505	12.54	4.36	1.83	0.13
2022	120	353	2.94	0.97	0.74	0.09
2023	119	643	5.40	2.07	0.99	0.10
2024	120	774	6.45	1.55	1.39	0.12

Table 10. Mean catch per unit effort of age zero American shad from the Kennebec River above the former site of the Edwards Dam.

Year	Sample size	Total catch	Arithmetic		Geometric	
			Mean	SD	Mean	SD
2000	76	437	5.75	40.84	0.32	0.91
2001	63	1379	21.89	80.19	1.01	1.6
2002	64	1974	30.84	210.24	0.64	1.35
2003	46	702	15.26	55.21	0.73	1.49
2004	42	648	15.43	54.79	1.43	1.58
2005	41	3701	90.27	341.29	1.06	1.96
2006	48	4041	85.98	196.18	3.68	2.44
2007	50	9599	191.98	544.83	4.47	2.6
2008	10	668	66.8	104.92	7.51	2.14
2009	8	10	1.25	3.54	0.35	0.85
2010	21	681	32.43	126.02	1.8	1.91
2011	24	1901	79.21	159.98	4.44	2.41
2012	40	103	2.58	15.8	0.17	0.75
2013	0	0	-	-	-	-
2014	0	0	-	-	-	-
2015	32	85	2.66	9.89	0.37	0.96
2016	8	6	0.75	0.75	0.36	0.65
2017	8	0	-	-	-	-
2018	28	0	-	-	-	-
2019	32	20	0.63	3.36	0.12	0.54
2020	25	0	-	-	-	-
2021	42	0	-	-	-	-
2022	45	33	0.73	4.62	0.11	0.54
2023	31	0	-	-	-	-
2024	48	354	7.38	34.17	0.4	1.10

Table 11. Arithmetic mean and variation of number of American shad taken per tow in the spring survey in the near shore ocean waters of Maine

SPRING

	Number			plus/minus 2 SE		Weight			plus/minus 2 SE	
	Mean	**SE**	**CV**	**Upper**	**Lower**	**Mean**	**SE**	**CV**	**Upper**	**Lower**
2001	1.16	0.37	0.76	1.90	0.42	0.04	0.01	0.67	0.06	0.02
2002	3.05	0.50	0.39	4.05	2.05	0.15	0.03	0.48	0.21	0.08
2003	1.62	0.34	0.38	2.29	0.94	0.05	0.01	0.39	0.07	0.03
2004	0.45	0.11	0.46	0.67	0.24	0.02	0.00	0.53	0.02	0.01
2005	1.67	0.29	0.31	2.26	1.09	0.06	0.01	0.34	0.09	0.03
2006	8.72	1.59	0.39	11.91	5.54	0.32	0.06	0.40	0.44	0.20
2007	2.41	0.30	0.28	3.00	1.81	0.11	0.01	0.30	0.14	0.08
2008	0.98	0.35	0.78	1.68	0.29	0.03	0.01	0.51	0.05	0.02
2009	1.24	0.17	0.31	1.58	0.90	0.04	0.01	0.32	0.05	0.03
2010	1.31	0.25	0.43	1.81	0.80	0.05	0.01	0.43	0.07	0.03
2011	3.24	0.60	0.41	4.44	2.04	0.14	0.03	0.43	0.20	0.08
2012	3.06	0.34	0.26	3.75	2.38	0.21	0.02	0.29	0.26	0.16
2013	2.36	0.45	0.43	3.26	1.46	0.16	0.04	0.57	0.24	0.08
2014	1.53	0.37	0.57	2.26	0.80	0.08	0.02	0.63	0.13	0.04
2015	3.38	1.46	1.06	6.29	0.46	0.13	0.05	0.96	0.23	0.03
2016	3.26	0.66	0.49	4.58	1.95	0.13	0.03	0.59	0.20	0.07
2017	3.01	0.38	0.31	3.76	2.26	0.13	0.02	0.34	0.16	0.09
2018	3.07	0.60	0.49	4.28	1.87	0.10	0.02	0.50	0.14	0.06
2019	2.05	0.45	0.50	2.96	1.15	0.10	0.02	0.48	0.14	0.06
2020										
2021	3.12	0.55	0.41	4.21	2.01	0.14	0.02	0.38	0.19	0.10
2022	4.11	0.63	0.32	5.39	2.85	0.21	0.04	035	0.28	0.14
2023	2.58	0.34	0.30	3.25	1.91	0.15	0.02	0.32	0.20	0.10
2024	1.68	0.55	0.55	2.79	0.57	0.09	0.04	0.67	0.18	0.01

Table 12. Arithmetic mean and variation of number of American shad taken per tow in the fall survey in the near shore ocean waters of Maine.

FALL	Number			plus/minus 2 SE		Weight			plus/minus 2 SE	
	Mean	SE	CV	Upper	Lower	Mean	SE	CV	Upper	Lower
2000	0.56	0.18	0.75	0.92	0.20	0.04	0.01	0.79	0.07	0.01
2001	0.06	0.04	1.37	0.14	-0.01	0.01	0.00	1.30	0.02	0.00
2002	1.33	0.54	0.81	2.42	0.24	0.03	0.01	0.68	0.05	0.01
2003	5.45	4.52	1.43	14.49	-3.58	0.16	0.09	1.00	0.34	-0.02
2004	1.08	0.46	0.81	1.99	0.17	0.08	0.03	0.65	0.14	0.02
2005	2.81	0.37	0.21	3.56	2.06	0.25	0.03	0.18	0.31	0.20
2006	1.14	0.54	0.94	2.21	0.07	0.09	0.02	0.51	0.14	0.04
2007	13.15	7.26	1.11	27.68	-1.38	0.53	0.16	0.67	0.84	0.21
2008	1.78	0.43	0.47	2.63	0.93	0.20	0.05	0.46	0.29	0.11
2009	2.91	1.60	1.22	6.11	-0.28	0.39	0.21	1.17	0.80	-0.02
2010	1.10	0.51	0.93	2.13	0.08	0.07	0.02	0.67	0.12	0.02
2011	12.10	10.92	1.81	33.95	-9.75	0.29	0.09	0.63	0.47	0.11
2012	1.81	0.76	0.86	3.33	0.28	0.24	0.10	0.83	0.44	0.04
2013	2.33	0.69	0.71	3.70	0.96	0.37	0.09	0.57	0.54	0.19
2014	1.26	0.37	0.64	2.01	0.51	0.16	0.05	0.64	0.26	0.07
2015	16.33	10.67	1.31	37.67	-5.02	0.99	0.31	0.69	1.61	0.36
2016	2.22	0.59	0.57	3.39	1.05	0.29	0.06	0.51	0.42	0.16
2017	2.38	0.65	0.70	3.69	1.08	0.28	0.06	0.61	0.41	0.15
2018	1.67	0.40	0.52	2.48	0.86	0.20	0.04	0.47	0.28	0.11
2019	1.61	0.42	0.61	2.45	0.76	0.29	0.09	0.78	0.48	0.10
2020	2.15	0.50	0.44	3.14	1.16	0.17	0.04	0.44	0.24	0.10
2021	1.77	0.61	0.78	2.98	0.55	0.20	0.06	0.73	0.32	0.07
2022	1.97	0.73	0.72	3.43	0.51	0.14	0.05	0.69	0.24	0.03
2023	0.76	0.18	0.53	1.12	0.39	0.07	0.02	0.49	0.11	0.04
2024	1.39	0.51	0.57	2.41	0.37	0.16	0.06	0.57	0.28	0.04

Table 13. Fork length (cm) of American shad collected by bottom trawl in near-shore ocean waters of Maine.

Year	Season	Min	Max	Year	Season	Min	Max
2000	Fall	9	29	**2019**	Spring	9	34
2001	Spring	12	26		Fall	10	49
	Fall	19	28	**2020**	Spring		
2002	Spring	12	28		Fall	9	30
	Fall	8	22	**2021**	Spring	11	26
2003	Spring	10	19		Fall	10	40
	Fall	10	31	**2022**	Spring	12	33
2004	Spring	11	24		Fall	9	30
	Fall	8	35	**2023**	Spring	13	40
2005	Spring	12	24		Fall	9	36
	Fall	9	24	**2024**	Spring	10	44
2006	Spring	9	25		Fall	9	31
	Fall	9	29				
2007	Spring	7	30				
	Fall	8	34				
2008	Spring	10	28				
	Fall	14	30				
2009	Spring	11	25				
	Fall	11	40				
2010	Spring	9	22				
	Fall	10	30				
2011	Spring	9	28				
	Fall	7	44				
2012	Spring	8	39				
	Fall	9	34				
2013	Spring	10	30				
	Fall	16	37				
2014	Spring	12	47				
	Fall	10	44				
2015	Spring	12	42				
	Fall	9	40				
2016	Spring	8	48				
	Fall	11	39				
2017	Spring	10	43				
	Fall	10	41				
2018	Spring	12	26				
	Fall	7	39				

Figures

Figure 1. American shad habitat in Maine waters.

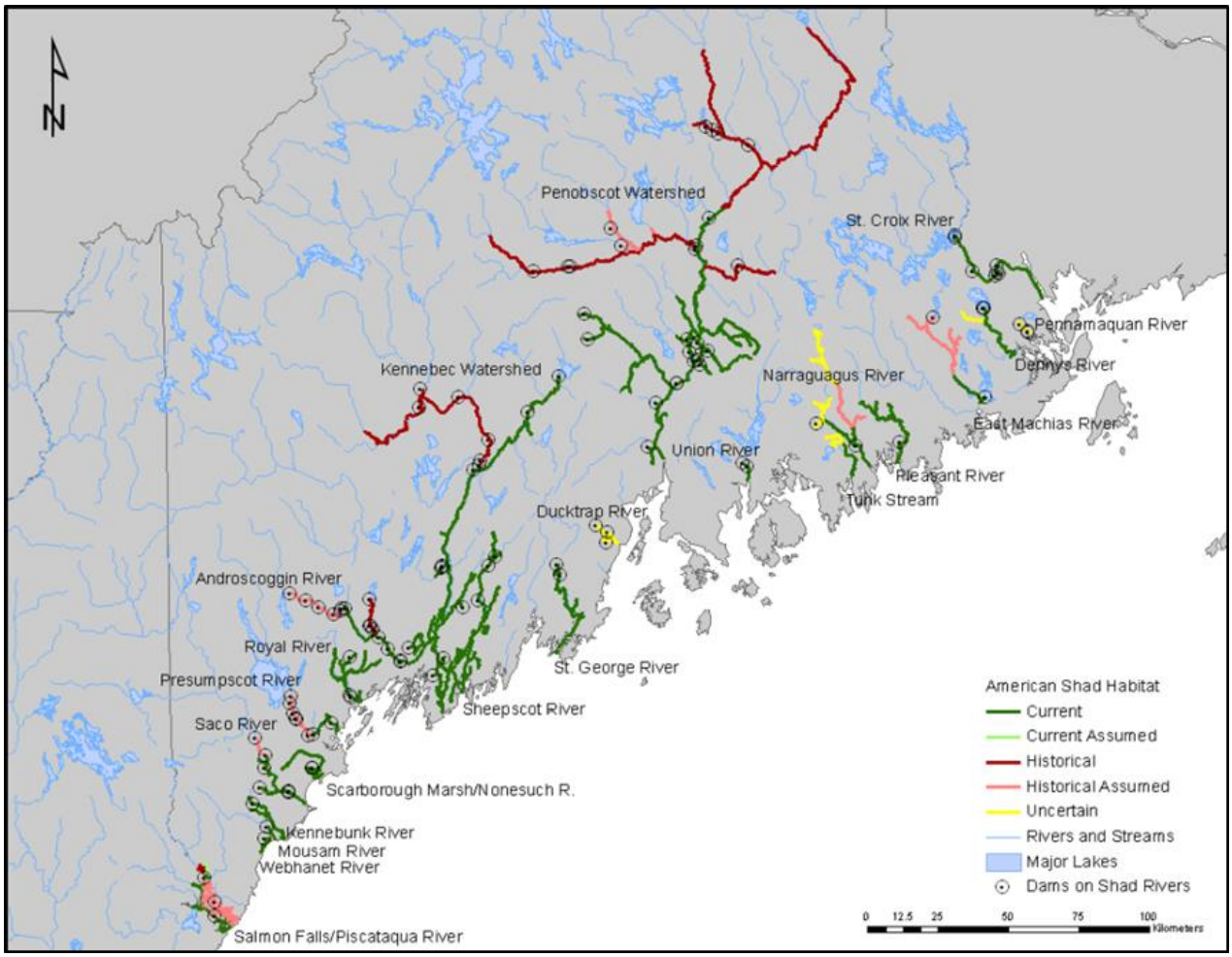


Figure 2. American shad caught and harvested based on unexpanded MRIP survey data 1996 – 2024.

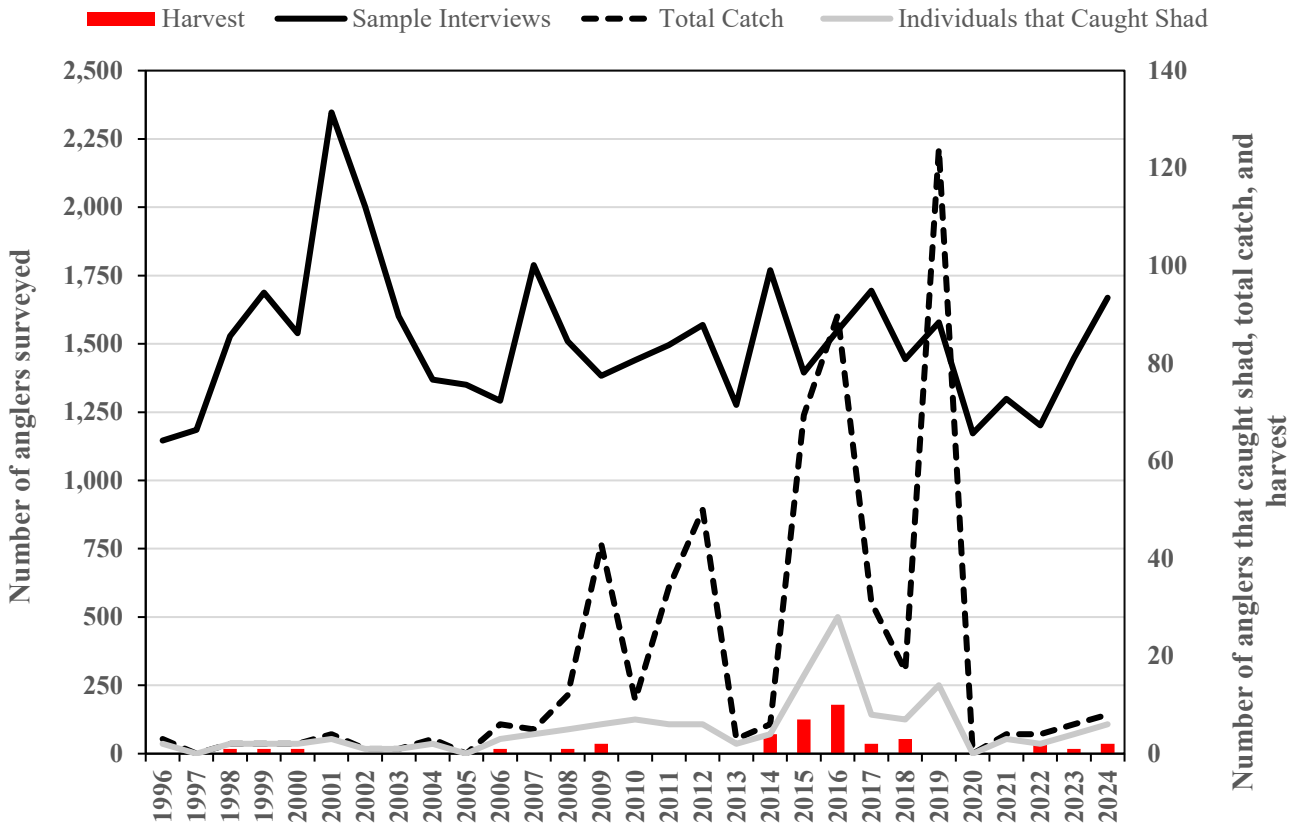


Figure 3. Commercial American shad landings for the State of Maine, 1887-2024.

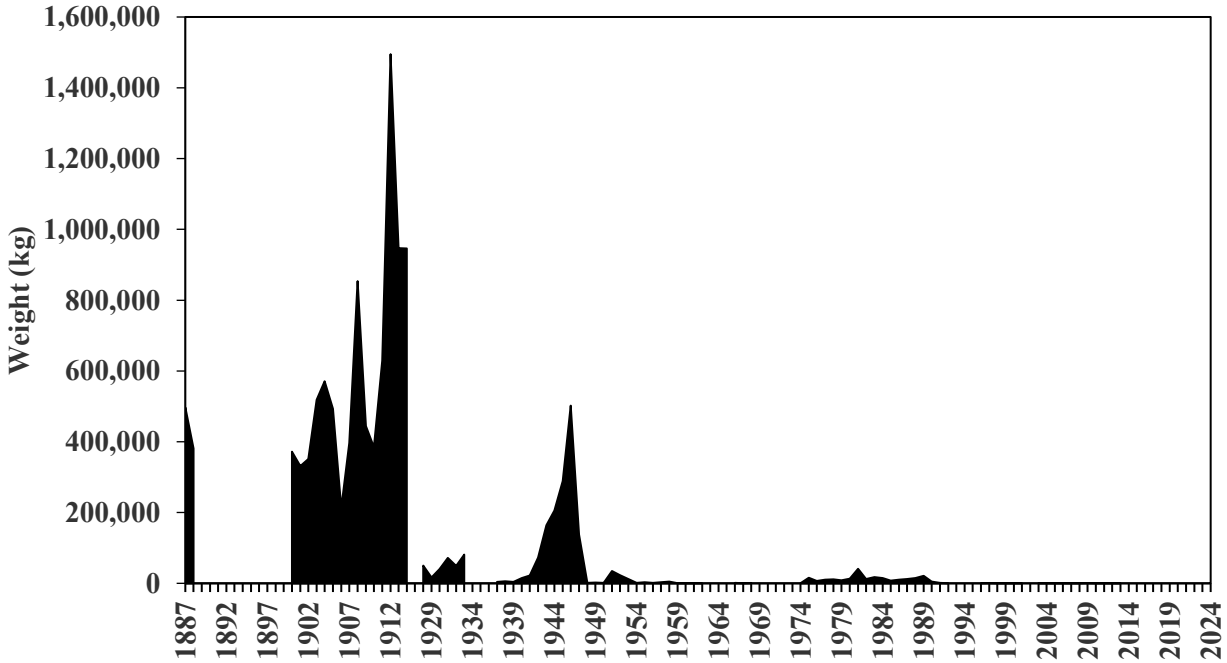


Figure 4. Juvenile alosine surveys sites in the Kennebec and Androscoggin estuary complex.

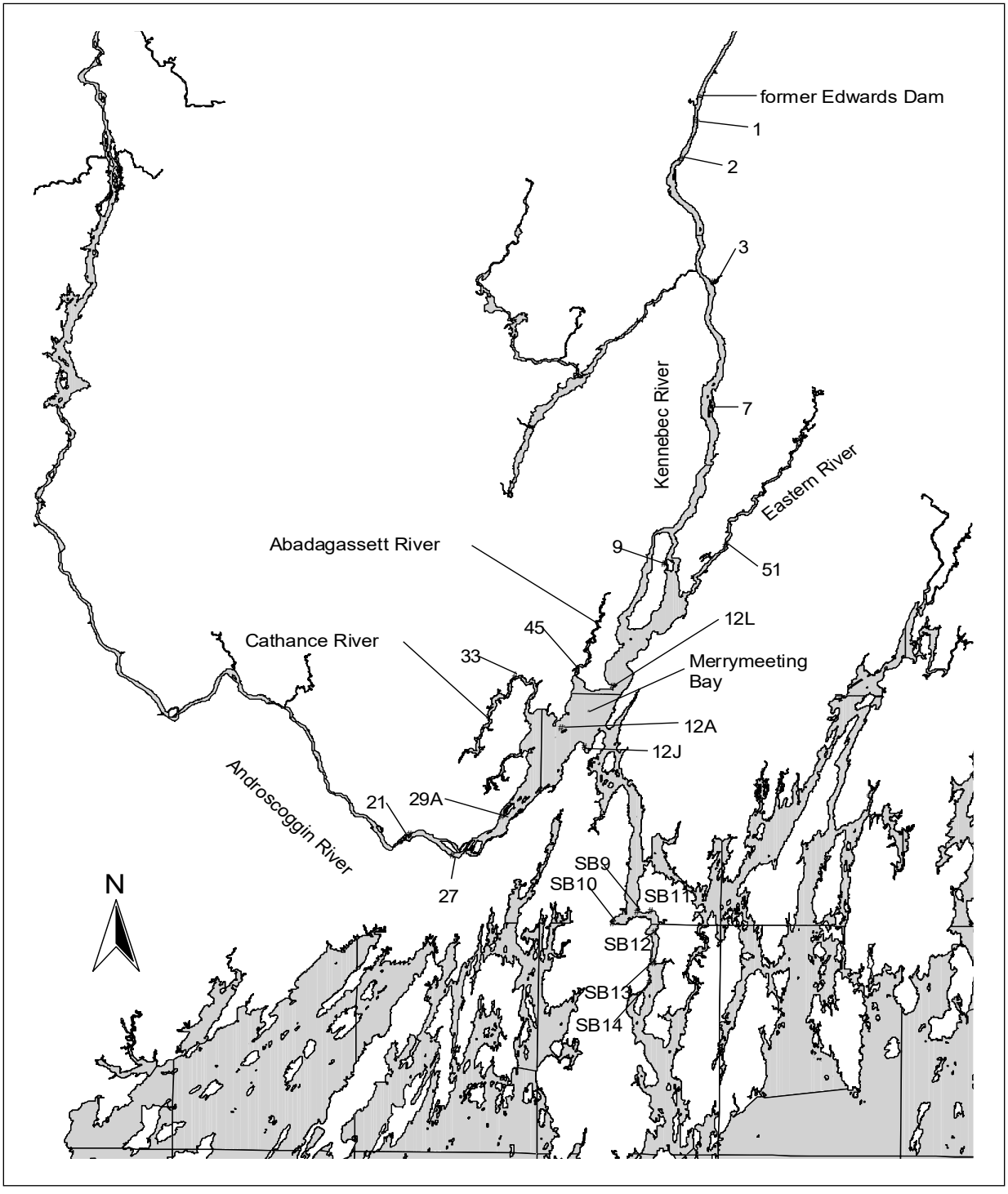


Figure 5. Beach seine sites in the non-tidal sections of the Kennebec River above the former Edwards Dam.

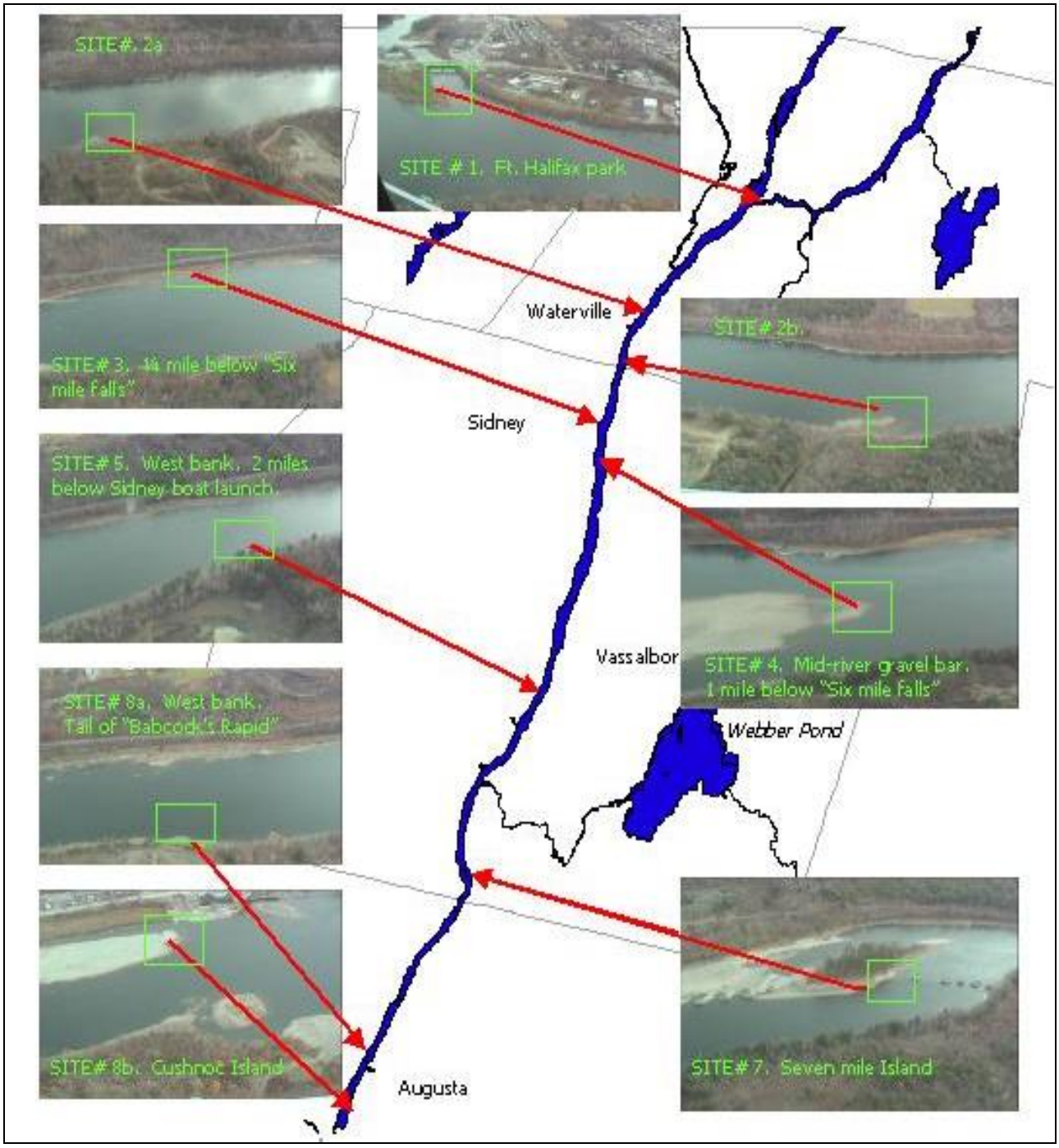


Figure 6. Geometric mean catch-per-seine-haul of age-0 American shad at sites in Merrymeeting Bay and the lower Kennebec, Androscoggin, Eastern, Cathance, and Abagadasett rivers.

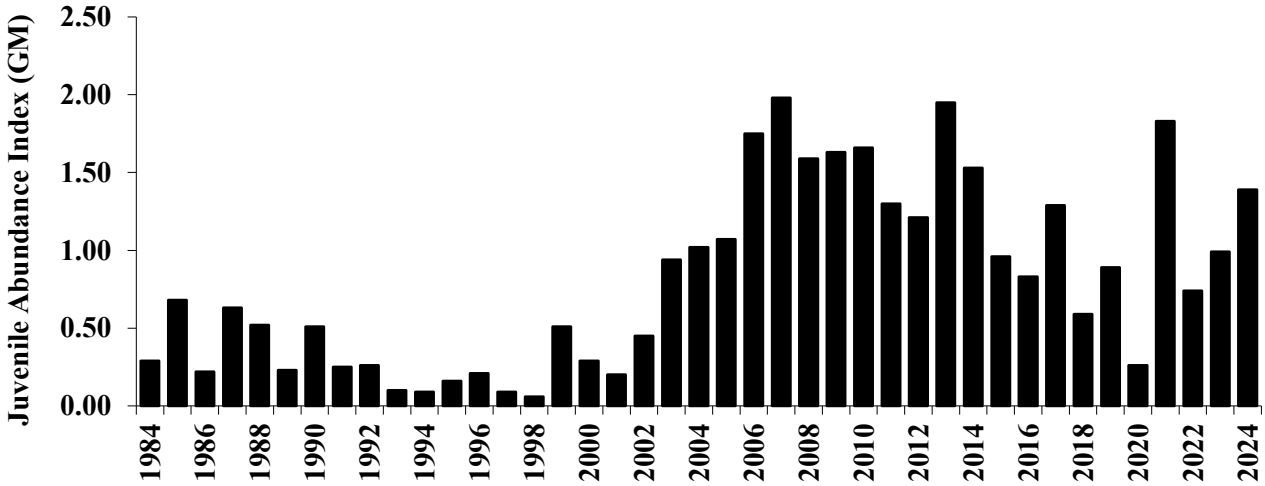


Figure 7. Geometric mean catch-per-seine-haul of age-0 American shad sites in the upper Kennebec River, Maine.

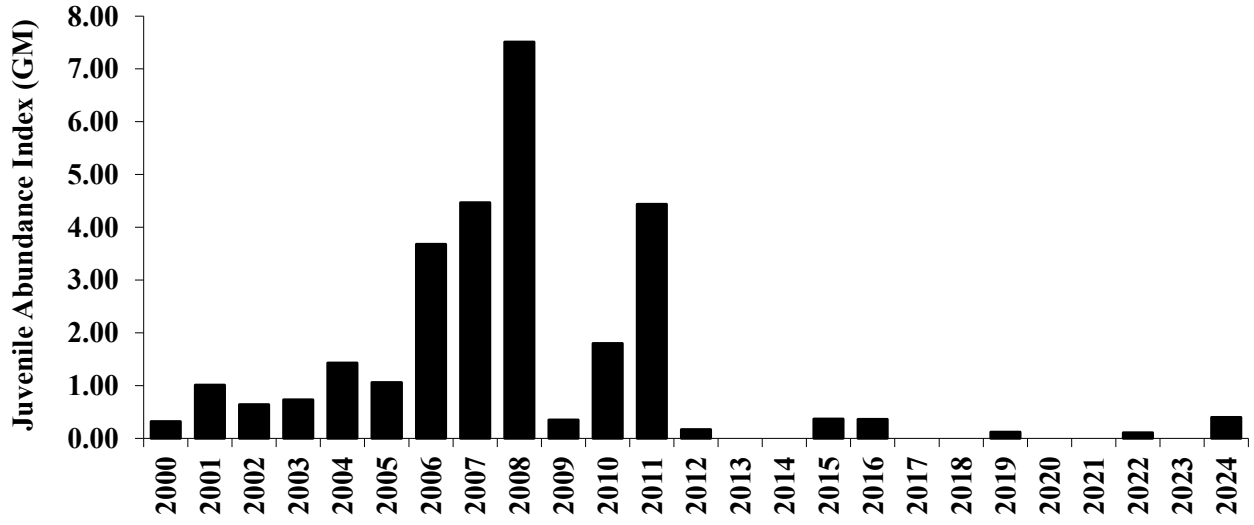


Figure 8. Ocean trawl sampling regions on the coast of Maine and New Hampshire.

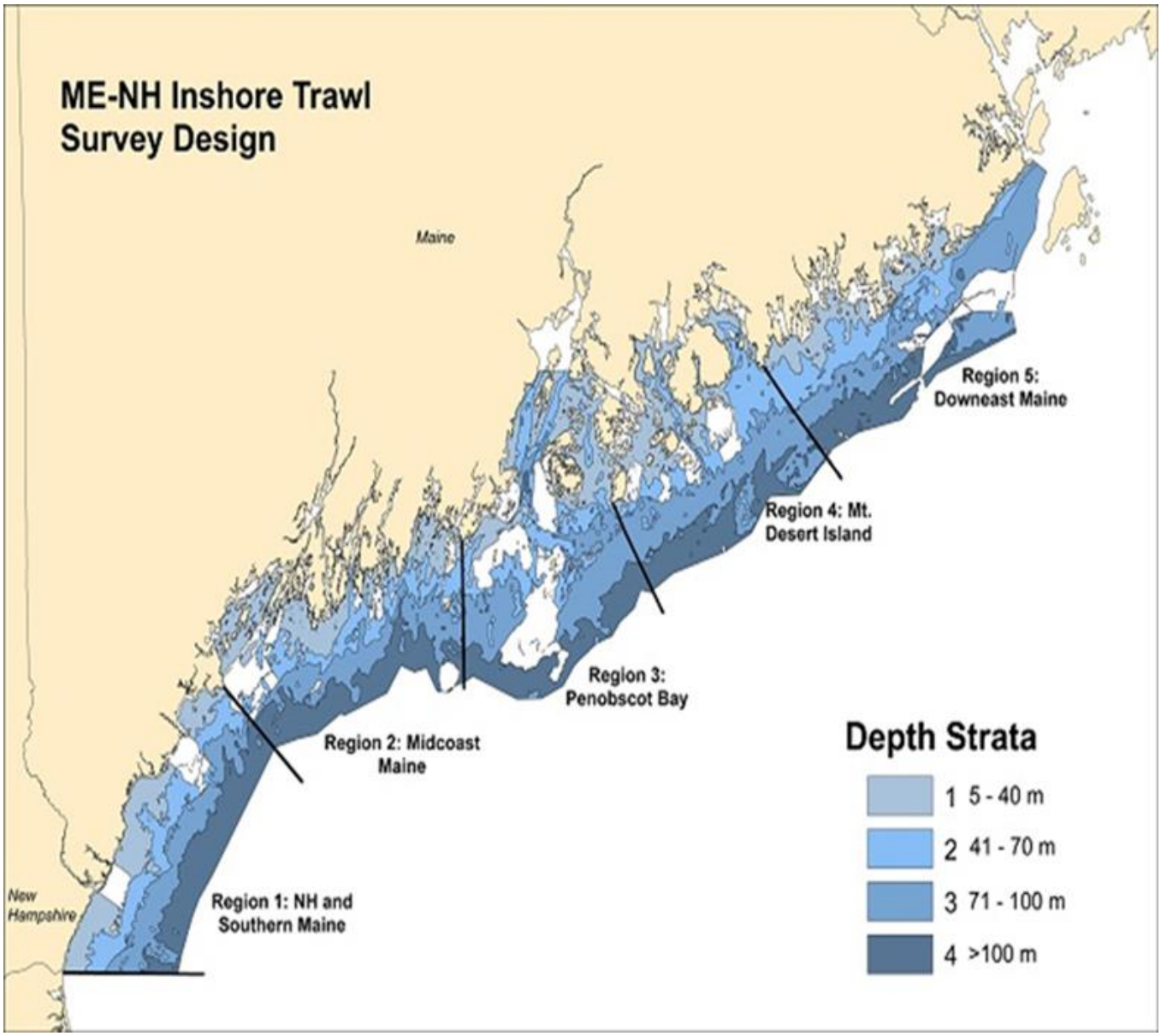


Figure 9. Catch-per-trawl of juvenile American shad taken in near shore ocean waters of Maine.

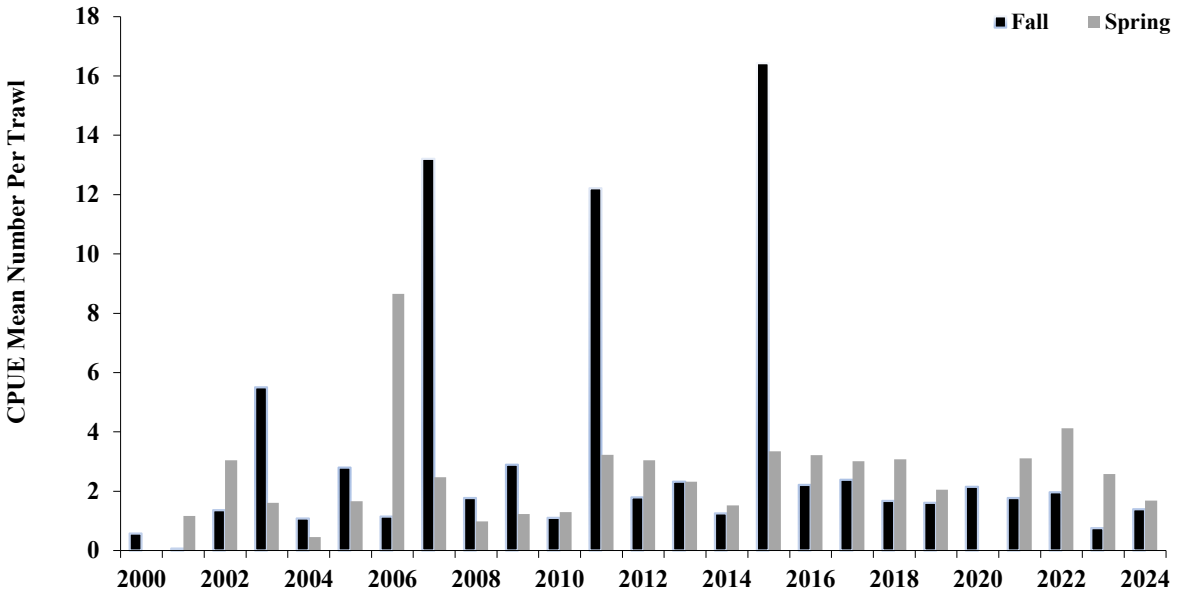


Figure 10. Percent occurrence of American shad captured for all tows conducted during the spring and fall trawl survey.

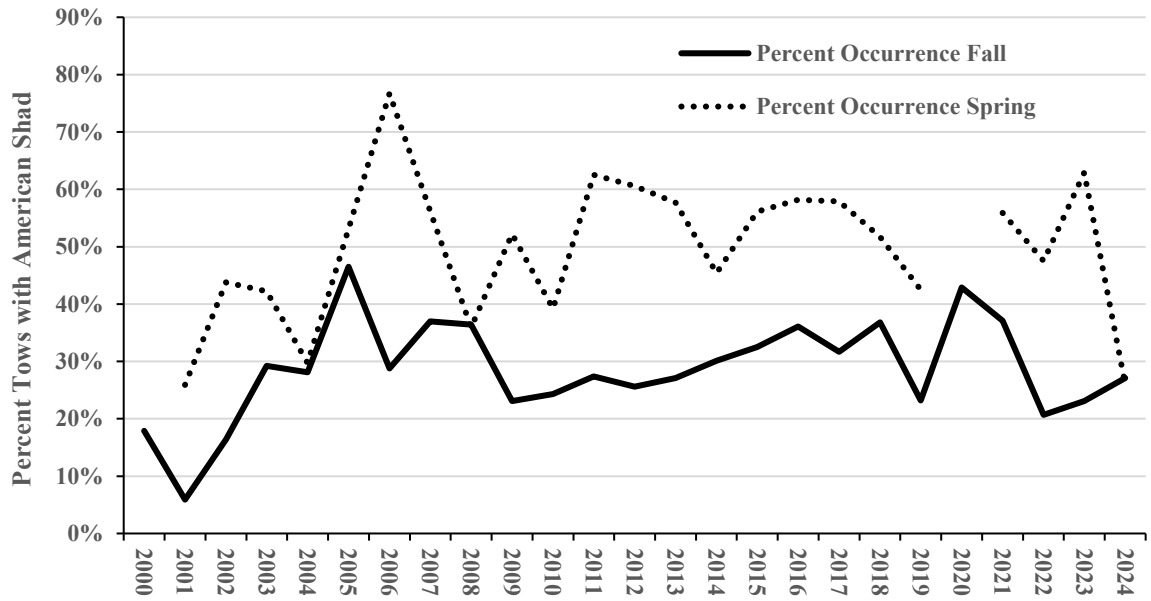


Figure 11. Stratified mean number and weight of American shad caught per tow during the spring trawl survey along the Maine coast.

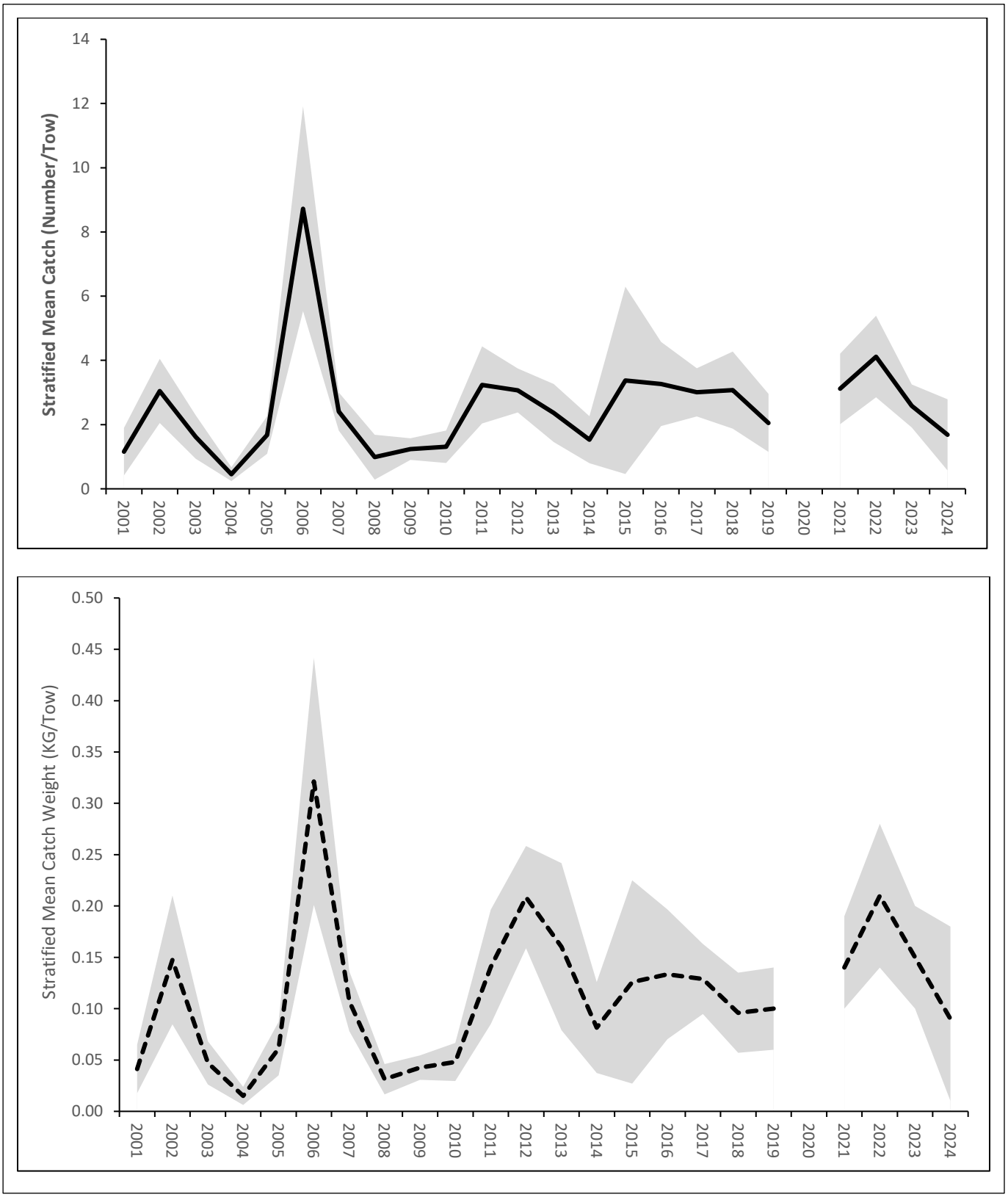


Figure 12. Stratified mean number and weight of American shad caught per tow during the fall trawl survey along the Maine coast.

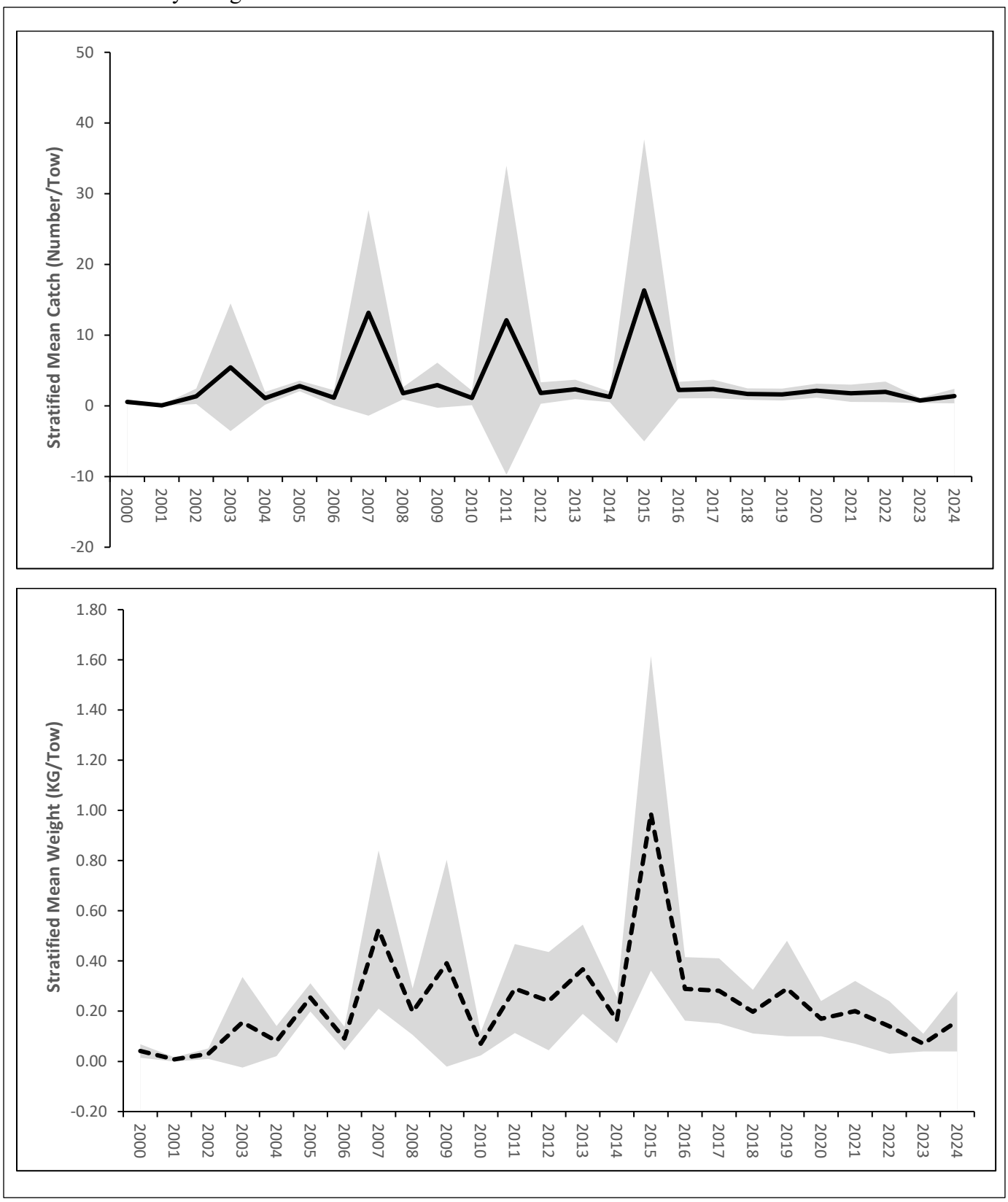


Figure 13. Cumulative upstream passage counts of American shad on all Maine rivers with counting capability.

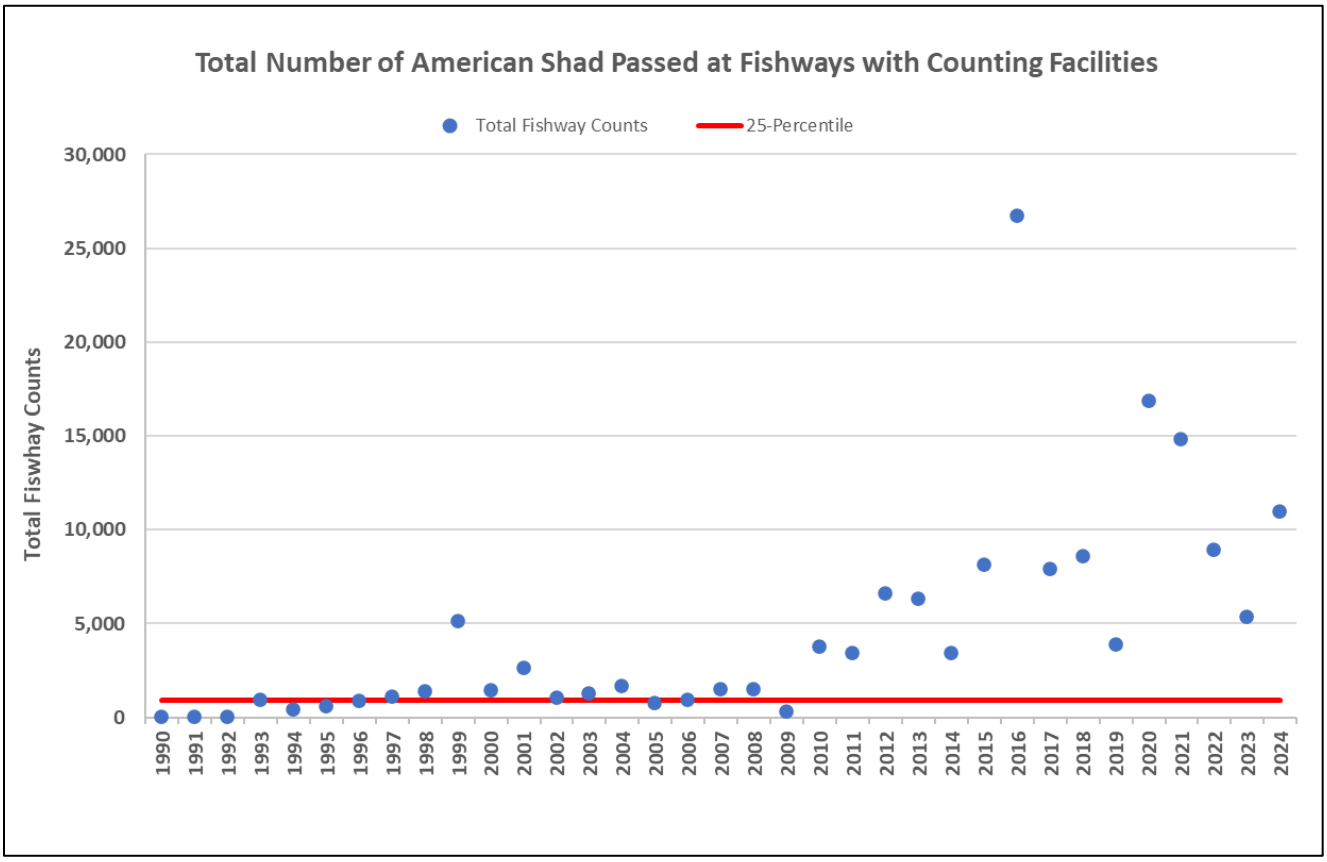
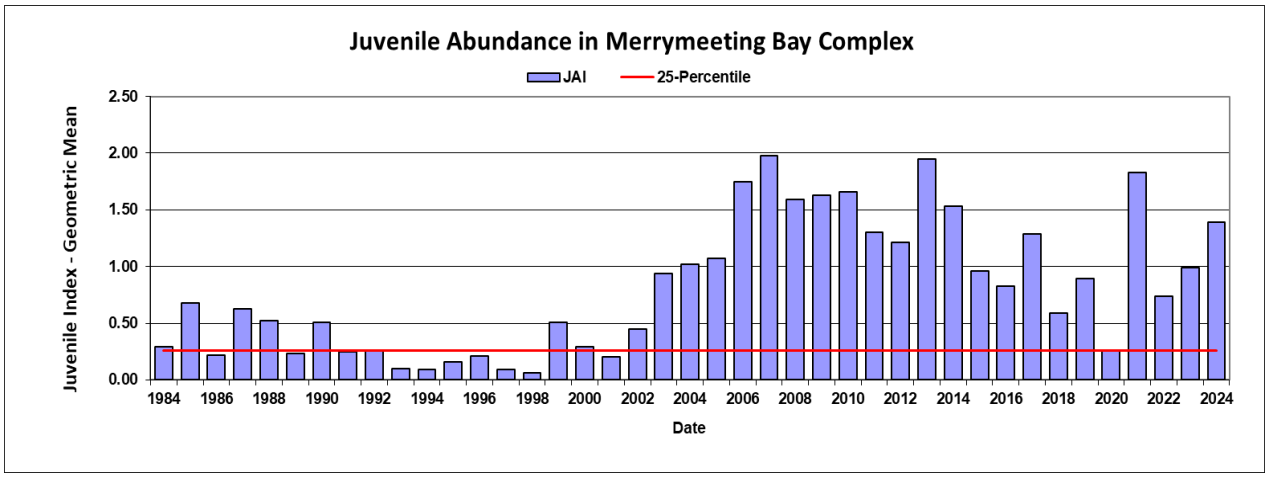


Figure 14. American shad JAI survey in Merrymeeting Bay 1984 – 2024.



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Delaware River Basin Fish and Wildlife Management Cooperative

Delaware Division of Fish and Wildlife • New Jersey Dept. of Environmental Protection Fish and Wildlife
Pennsylvania Fish and Boat Commission • New York State Department of Environmental Protection
U.S. Fish and Wildlife Service • National Marine Fisheries Service

Liaisons: Delaware River Basin Commission • National Park Service

March 23, 2026

Atlantic States Marine Fisheries Commission
Shad and River Herring Technical Committee
1050 N. Highland St., Ste 200 A-N
Arlington, VA 22201
Attn: James Boyle, FMP Coordinator

Subject: Delaware River Basin Fish and Wildlife Management Cooperative's American Shad Habitat Plan for 2026-2031.

Dear Shad and River Herring Technical Committee,

The Delaware River Fish and Wildlife Management Cooperative (Co-op) hereby submits our 5-year update to the American Shad Habitat Plan for the Delaware River (Plan)[1] as is required under Amendment 3.

The Plan, last updated in 2021, remains accurate and updated for the Delaware River Basin. The Co-op proposes to retain use of the 2021 plan for the next 5-year interval (2026-2031).

Several significant habitat-related items have occurred since the development of the 2021 Plan, including:

- Notable Dam Removals in Shad Habitat (complete list of dam removals in Table 1):
    - County Line Dam (2022) – Paulins Kill River, NJ
    - Paulina Lake Dam (2024) - Paulins Kill River, NJ
    - Dam 6 (2025) – Brandywine River, DE
    - Bushkill Dam No. 4, Crayola Dam – Bushkill Creek, PA
    - Bushkill Dam No. 3, Silk Master's Dam – Bushkill Creek, PA
    - Lafayette College Dam, Bushkill Creek, PA
    - Stutz Dam, Unnamed Tributary to the Delaware River, PA
    - Willow Creek Dam, Willow Creek, PA
    - Tamaqua Dam, Little Schuylkill River, PA

[1] The Delaware River Basin Fish and Wildlife Management Cooperative. American Shad Habitat Plan for the Delaware River Basin. Prepared by the Nature Conservancy and submitted to ASMFC as a requirement of Amendment 3 to the Interstate Management Plan for Shad and River Herring. January 7, 2021. 35pp.

- Planned Future Dam Removals and Fish Passage:
    - Upper and Lower E.R. Collins Dams – Belvidere, NJ
    - White Clay Creek Dams 2, 4, and 7 – DE
    - Warren Glen Dam – Musconetcong River, NJ
    - Installation of Rock Ramp on Dam 2 – Brandywine River, DE
- Hydropower development is being considered at existing dams:
    - Black Rock Dam – Schuylkill River, PA
    - Norristown Dam - Schuylkill River, PA
    - Chain Dam - Lehigh River, PA
- Data centers that may use river water for cooling are being considered in the Basin. With additional water withdrawals, the threat of impingement and entrainment increases.
- In September 2025, EPA required higher dissolved oxygen levels to be provided in the Delaware River Estuary to protect all life stages of sensitive aquatic species[2] which will provide more suitable water quality for spawning and nursery habitats.
- Invasive species, including blue catfish, northern snakehead, and freshwater drum are expanding their range in the basin which may increase predation on American Shad and river herring.

The Co-op will continue to track habitat improvement projects and related activities in the basin as identified as high priority needs in the 2021 Plan for the next 5-year cycle of the Plan. If you have any questions or concerns, please reach out to the Co-op Secretary, Sheila Eyler at sheila_eyler@fws.gov or 717-387-2117.

Sincerely,

Coja Yamashita Digitally signed by Coja Yamashita
Date: 2026.03.23 10:27:30 -04'00'

Coja Yamashita
Pennsylvania Fish and Boat Commission
Policy Committee Chair
Delaware River Basin Fish and Wildlife Management Cooperative

[2] https://www.epa.gov/wqs-tech/water-quality-standards-delaware-river, last accessed 1/6/2026.

Table 1. Dam removals that have occurred in the Delaware River Basin since 2020. Note that removal listings for 2025 may not be comprehensive..

Dam Name	Year Rem.	River	HUC8	State
New Jersey No Name # 119 Dam (Lore's Mill Dam)	2022	Dividing Creek	Cohansey-Maurice	NJ
Jericho Pond Dam	2021	Stow Creek	Cohansey-Maurice	NJ
Centura-Normandy Dam	2023	Tindale Run	Lower Delaware	NJ
Warren Hills Regional School District Dam	2020	Tributary to Pohatcong Creek	Middle Delaware - Musconetcong	NJ
No. 10 Watergate Pond Dam	2021	Vancampens Brook	Middle Delaware-Mongaup-Brodhead	NJ
No. 2 Watergate Pond Dam	2021	Vancampens Brook	Middle Delaware-Mongaup-Brodhead	NJ
Cedar Grove Dam	2024	Pequest River	Middle Delaware-Muconetcong	NJ
Paulina Dam	2024	Paulins Kill River	Middle Delaware-Muconetcong	NJ
Beatty's Mill Dam (East Avenue Dam)	2023	Musconetcong River	Middle Delaware-Musconetcong	NJ
County Line Dam	2022	Paulins Kill	Paulins Kill	NJ
Bear Brook Lower Dam	2020	Bear Brook	East Branch Delaware	NY
Nixon Park Dam	2021	East Branch Red Clay Creek	Brandywine-Christina	PA
Dam 6	2025	Brandywine Creek	Brandywine-Christina	DE
Dilldown Creek Dam	2024	Dilldown Creek	Lehigh	PA
Geigers Bridge Dam	2021	Tributary to the Jordan Creek	Lehigh	PA
City of Easton Lower Dam (Recycling Center Dam)	2024	Bushkill Creek	Middle Delaware-Muconetcong	PA
Bushkill Dam No. 3 (Silk Masters Dam)	2023	Bushkill River	Middle Delaware-Musconetcong	PA
Lafayette College Dam	2023	Bushkill Creek	Middle Delaware-Musconetcong	PA
Stutz Dam	2023	Unnamed tributary to Delaware River	Middle Delaware-Musconetcong	PA
Aluta Mill Road Dam	2021	Bushkill Creek	Middle Delaware-Musconetcong	PA
Crayola Dam (Water Power Dam)	2021	Bushkill Creek	Middle Delaware-Musconetcong	PA
Archibald Johnston Conservation Area Dam 1	2024	Monocacy Creek	Monocacy	PA
Archibald Johnston Conservation Area Dam 2	2024	Monocacy Creek	Monocacy	PA
Archibald Johnston Conservation Area Dam 3	2024	Monocacy Creek	Monocacy	PA
Archibald Johnston Conservation Area Dam 4	2024	Monocacy Creek	Monocacy	PA

Archibald Johnston Conservation Area Dam 5	2024	Monocacy Creek	Monocacy	PA
Archibald Johnston Conservation Area Dam 6	2024	Monocacy Creek	Monocacy	PA
Lorimer Reserve Upper Pond Dam	2024	Unnamed Tributary to Valley Creek	Schuylkill	PA
Willow Creek Dam	2023	Willow Creek	Schuylkill	PA
East Greenville Dam (Perkiomen Creek Gage Dam)	2022	Perkiomen Creek	Schuylkill	PA
Hillegas Dam	2022	West Branch Perkiomen Creek	Schuylkill	PA
Van Reed Paper Mill Dam	2022	Cacoosing Creek	Schuylkill	PA
Gensamer Dam	2020	Tributary to Neshaminy	Schuylkill	PA

Delaware River Basin Fish and Wildlife Management Cooperative

Delaware Division of Fish and Wildlife • New Jersey Dept. of Environmental Protection Fish and Wildlife
Pennsylvania Fish and Boat Commission • New York State Department of Environmental Protection
U.S. Fish and Wildlife Service • National Marine Fisheries Service

Liaisons: Delaware River Basin Commission • National Park Service

March 23, 2026

Atlantic States Marine Fisheries Commission
Shad and River Herring Technical Committee
1050 N. Highland St., Ste 200 A-N
Arlington, VA 22201
Attn: James Boyle, FMP Coordinator

Subject: Requesting extension to submit the Delaware River Basin Fish and Wildlife Management Cooperative's American Shad Sustainable Fishing Plan for the Delaware River Basin

Dear Shad and River Herring Technical Committee,

The Delaware River Fish and Wildlife Management Cooperative (Co-op) requests a 1-year extension to file the 5-year update to the American Shad Sustainable Fishing Plan for the Delaware River Basin (Plan)[1] as is required under Amendment 3.

The current Plan was approved by the Atlantic States Marine Fisheries Commission (ASMFC) Shad and River Herring Management Board in March of 2022 and expires at the end of 2026. The Co-op proposes to continue to operate with a 1-year extension under the existing Plan through the 2027 fishing season, allowing for time for several additional items to be considered by the Co-op to address future sustainability.

The Co-op, in conjunction with ASMFC, is funding a creel survey in the Delaware River Basin in 2026. The Co-op's understanding of recreational fishing effort and harvest is dated, with the most recent survey completed nearly 25 years ago in 2002. A better understanding of the current recreational fishery will allow the Co-op to contemplate what, if any, management actions should be taken to reduce shad mortality in that fishery. The creel survey results are particularly important to consider given that mortality from the commercial fishery has drastically dropped in the past 15 years, with landings since 2020 under 1,000 pounds per year. Though landings in the commercial fishery are low, the Delaware River Basin population continues to experience

[1] The Delaware River Basin Fish and Wildlife Management Cooperative. American Shad Sustainable Fishing Plan for the Delaware River Basin for 2022-2026. March 2022. 77pp.

unsustainable levels of mortality, as first identified in the 2020 American Shad Benchmark Stock Assessment and Peer Review Report.

In addition, the Co-op is planning to review utility of existing indices and consider other indices to track the American Shad population in the Delaware River Basin. The adult spawning population is currently characterized by one survey in one location, which has shown low index levels for the past five years. In particular, the Co-op will consider other fishery surveys that encounter adult shad over a larger geography in the Basin with the update of the Plan.

The 1-year extension to file an updated Plan will allow the Co-op more time to review the creel survey results as well as evaluate other existing fishery surveys that encounter adult shad in the Delaware River Basin to determine if additional management action should be taken to further reduce mortality of American Shad in the Delaware River Basin and if alternative surveys should be used to more accurately track the population.

If the 1-year extension is approved, the Co-op will submit an updated Sustainable Fishing Plan to the ASFMC by late 2027 for approval and implementation for the next 5-year period (2028-2032). If you have any questions or concerns, please reach out to the Co-op Secretary, Sheila Eyler at sheila_eyler@fws.gov or 717-387-2117.

Sincerely,

Coja Yamashita Digitally signed by Coja Yamashita
Date: 2026.03.23 10:24:34 -04'00'

Coja Yamashita
Pennsylvania Fish and Boat Commission
Policy Committee Chair
Delaware River Basin Fish and Wildlife Management Cooperative

NEW YORK STATE | Department of Environmental Conservation

KATHY HOCHUL
Governor

AMANDA LEFTON
Commissioner

August 26, 2026

James Boyle
FMP Coordinator
Atlantic States Marine Fisheries Commission
1050 N. Highland St. Suite 200 A-N
Arlington, VA 22201

Dear Mr. Boyle,

Under the Technical Guidance for Implementation of Amendments 2 and 3 to the Interstate Fisheries Management Plan for Shad and River Herring, states must notify the Board if a stock falls below the sustainability targets identified in their respective Sustainability Fisheries Management Plan. Please consider this letter as notification from New York for both Alewife and Blueback Herring in the Hudson River.

In 2025, New York's Young-of-Year sustainability targets for both species of river herring were below their respective 25th percentile targets for the third consecutive year, triggering a management response. New York is currently exploring an appropriate response to this period of poor recruitment, targeting implementation for the 2027 fishing season.

The magnitude of the management response will consider New York's other sustainability target for total mortality which has remained below the threshold for both species as well as the preliminary results of the 2026 Juvenile Abundance Index. Additionally, while not used as a sustainability target, adult spawning stock relative abundance has remained variable but stable with the highest and third highest relative abundance observed in 2025 for Blueback Herring and Alewife, respectively. Sustainable total mortality and stable adult relative abundance suggest that recruitment is being affected by environmental conditions rather than fishing mortality making selecting the appropriate management response challenging.

Potential management actions being considered include but are not limited to the following:

- Creel reduction
- Increased escapement period
- Time and area closures
- Permit fee restructuring

If you have any questions about this notification, please feel free to contact Wes Eakin at (845) 256-3171 or william.eakin@dec.ny.gov .

Sincerely,

John Maniscalco
Bureau Chief, Marine Fisheries

Cc: Toni Kerns, Phil Edwards, Martin Gary, Senator Monica Martinez, Emerson Hasbrouck