FINAL REPORT

Regional Chesapeake Bay electronic and trip-level reporting for commercial seafood dealers

Submitted by the **Oyster Recovery Partnership** to the Maryland Department of Natural Resources

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Introduction

This project focuses on gathering information to determine whether trip-level electronic reporting by commercial seafood dealers in the Chesapeake Bay is needed and feasible. Currently, reporting practices vary across jurisdictions and different fisheries, often rely on paper forms, and do not consistently capture trip-level data in real time. The Maryland Department of Natural Resources (MDNR) received funding to explore dealer reporting needs in coordination with the Potomac River Fisheries Commission (PRFC) and the Virginia Marine Resources Commission (VMRC). The Oyster Recovery Partnership (ORP) facilitated the project by organizing agency engagement, leading industry outreach, and compiling stakeholder input to support system planning across all three jurisdictions.

The lack of standardized reports across jurisdictions and monthly summarized dealer purchases makes it harder to verify harvester reported landings, conduct stock assessments, and respond quickly to quota changes. These gaps could delay quota tracking, complicate enforcement, and increase administrative burden. To address these issues, the project lays the groundwork for a flexible, coordinated reporting approach that improves data quality, supports accountability, and aligns with the day-to-day operations of seafood dealers. This report summarizes findings from Phase 1 and outlines next steps for system development.

Why electronic trip-level dealer reporting matters

Seafood dealer reporting systems vary widely in format, frequency, and level of detail. Paper-based processes remain common, and electronic systems are often fragmented or inconsistent. Without trip-level details, dealer reports often cannot be matched to harvester data, making it difficult for managers to verify landings, monitor quotas in real time, or respond quickly to management needs. Electronic trip-level reporting provides a path forward by supporting more timely, accurate, and standardized submissions. For managers, it reduces reliance on manual data entry, improves the quality of data and improves access to actionable information. For dealers, well-designed systems can offer business-aligned features, reduce duplication across jurisdictions, and streamline compliance.

Project phases and current progress

Phase 1: Stakeholder engagement and requirements gathering

This phase focused on engaging seafood dealers and fisheries managers across Maryland, Virginia, and the Potomac region to identify reporting challenges, operational needs, and system preferences. ORP conducted a manager survey, one-on-one meetings with MDNR, PRFC, and VMRC staff, a regional dealer survey, joint agency discussions, and a combined session with managers and industry. These efforts clarified current workflows and identified agency-specific and dealer considerations, forming the foundation for Phase 2.

Phase 2: System development

Building on findings from Phase 1, Phase 2 will explore modular system design options that align core features across agencies and integrate with existing electronic or digital tools. Development will prioritize compatibility, user-centered design, and real-world testing through pilot programs. Dealers and managers will be directly involved in testing and providing feedback to guide system modifications.

Phase 3: Implementation and outreach

Phase 3 will expand testing by providing hands-on training and delivering targeted outreach to support dealer onboarding and long-term adoption. Activities may include recruiting new dealer participants, offering technical support, and collaborating with industry groups to ensure tools are accessible and relevant. Feedback during this phase will guide final refinements to ensure usability and sustainability.

Review of existing reporting systems

To support system planning, ORP conducted a review of dealer reporting programs used in other states, including both agency-run and third-party platforms (Supplementary materials: Attachment A). This review was completed early in the project to help shape information-gathering sessions with managers and industry. It helped identify practical features, technical considerations, and examples of approaches that have worked elsewhere and could inform system development in the Chesapeake Bay region.

The examples offer context for how other regions are addressing similar reporting challenges. They highlight design features that have improved adoption, reduced redundancy, and strengthened data sharing among harvesters, dealers, and managers. The review was based on publicly available documents and, where possible, supplemented with conversations with agency staff. While system details vary by state and fishery, the findings provide a shared reference point as MDNR, VMRC, and PRFC consider next steps for their own reporting systems.

Regional and state reporting systems

State-managed seafood dealer reporting systems vary in terms of format, reporting frequency, digital infrastructure, and integration with federal platforms like SAFIS (Standard Atlantic Fisheries Information System). Several Atlantic states—including Massachusetts, New York, Connecticut, Rhode Island, New Jersey, and Maine—use SAFIS tools such as eDealer (for dealers) and eTrips (for harvesters) for weekly or trip-level electronic submissions. While these systems support real-time data access and regulatory compliance, several states—including Delaware, South Carolina, Georgia, and North Carolina—continue to rely heavily on paper forms, though electronic options are expanding in some cases. In both Georgia and North Carolina, seafood dealers (not

harvesters) are responsible for submitting trip-level reports. Harvesters do not submit independent trip reports unless they are also acting as dealers.

Maryland and Virginia operate hybrid systems. In Maryland, harvesters submit trip-level reports through the state-managed electronic Fishing Activity & Catch Tracking System (FACTS™), though some still opt to report using monthly paper forms. Most seafood dealers also submit paper reports for all state-managed species, which are manually entered by MDNR staff. Additionally, some Maryland harvesters and dealers use SAFIS for both state and federally managed species. In Virginia, the Gateway system collects electronic trip-level harvester reports, though some paper use remains. Virginia dealers submit paper-based reports for quota species and, in some cases, also use SAFIS for federally managed species. In the Potomac region, commercial harvesters are required to submit weekly paper reports to PRFC using standardized forms. These mixed approaches can limit timely access and complete integration between harvester and dealer records. *(For additional details on Maryland, Virginia and Potomac reporting practices identified during this project's information gathering phase, see the Results section.)*

Outside the SAFIS network, states like Oregon and Alaska operate their own electronic dealer ticketing systems. Alaska's eLandings platform is particularly robust, integrating dealer and harvester reporting, supporting quota tracking, and offering offline capabilities for use in remote areas. North Carolina and Georgia maintain state-run trip ticket programs focused on paper submissions, though efforts to expand electronic options are underway.

Across these states, successful systems tend to use standardized data fields, support real-time reporting, and include strong training and support resources. States with ongoing paper use often cite the need for low-tech solutions for small businesses or infrastructure limitations. These comparisons help highlight what may work—and what to avoid—when designing an electronic and/or trip-level reporting system for the Chesapeake Bay.

The scale of seafood dealer reporting varies widely across states. For example, Maryland licensed 2,394 seafood dealers in 2021, with 477 actively buying seafood for resale across blue crab, finfish, and shellfish sectors. Virginia had 338 licensed dealers that year, many of whom only report on quota-managed species like striped bass and eels. In contrast, North Carolina's Trip Ticket Program processes tens of thousands of trip-level reports annually, reflecting a larger paper-based reporting burden. Massachusetts and New York, with mandatory electronic reporting via SAFIS, each have several hundred active seafood dealers submitting thousands of trip-level reports weekly, reflecting high-volume electronic reporting systems. This variation in program size underscores the need for flexible, scalable tools, as dealer sizes and reporting capacity differ across jurisdictions.

Third-party platforms

A range of third-party platforms have been developed to support seafood dealer reporting, offering dealers tools tailored to their business needs while helping meet regulatory requirements. These platforms are typically built by private companies and vary

in their level of integration with state or federal systems. Common examples include TraceRegister, eCatch, VESL, Oceanfarmr, and BlueTrace.

These platforms provide features such as harvest tagging, inventory management, and digital traceability from dock to buyer. Many are mobile-compatible and offer cloud-based access, enabling real-time updates and easier record management. Some platforms can export data in formats compatible with agency systems, while others work directly with regulators to build API-based integrations. In states where electronic dealer reporting is mandatory, third-party platforms may be approved for official submissions if they meet specific technical and regulatory standards. For example, vendors like BlueTrace and ShellCentral have worked with agencies in Maine and Massachusetts to develop SAFIS-compatible formats that streamline reporting to state systems. However, not all states accept third-party reports, and approval processes can vary.

As part of this project, reviewing third-party platforms provided insight into dealer preferences for intuitive, business-aligned tools. It also underscored the importance of flexibility and interoperability in any new system—particularly in regions like the Chesapeake Bay where dealers may already use these platforms for inventory or customer communications. Importantly, data ownership and access can vary across third-party platforms. In some cases, agencies receive direct submissions; in others, the vendor or dealer may retain control over the data unless specific integration agreements or permissions are in place. These findings help guide future system development by identifying features that dealers value and may expect from any new electronic reporting system.

Takeaways

A review of both state-managed and third-party dealer reporting systems revealed several common themes that could inform system planning in the Chesapeake Bay region:

- *Trip-level and real-time reporting*: Many successful programs prioritize timely, trip-level submissions to verify landings, monitor quotas, and align harvester and dealer data. This level of granularity supports more responsive fisheries management and improved compliance tracking.
- *Hybrid systems are common*: Even in states with robust electronic platforms, paper-based reporting remains in use for certain fisheries or dealer types.
- *Standardized data fields*: Effective systems share a foundation of consistent data elements (e.g., license numbers, species codes, trip identifiers) that allow information to be compared and validated across agencies. Standardization is especially important in regions like the Chesapeake Bay, where multiple jurisdictions share responsibility for managing overlapping fisheries.
- *User-friendly, flexible design*: Adoption challenges often stem from system complexity, limited digital skills, outdated devices, or unreliable internet access. Tools that are simple to use, accessible across devices, and able to function with low connectivity are more likely to be adopted by smaller or rural businesses.

- *Integration with business operations*: Many dealers value features that go beyond regulatory reporting, such as inventory management and automated summaries for tax or compliance purposes. Aligning with these business needs can help drive adoption and reduce duplicative data entry.
- *Training and support*: Outreach, demonstrations, and help desk support were key components of successful rollouts. Systems that included early pilot testing, user feedback loops, and clear guidance saw higher participation rates and smoother transitions.

Together, these themes emphasize that while no single model fits all, systems that prioritize usability, compatibility, and standardization tend to gain broader acceptance and offer more effective long-term solutions for both agencies and industry. These lessons directly informed the information gathering sessions conducted in Phase 1 and may guide the development of flexible, coordinated reporting approaches across the Bay.

Implications for Chesapeake Bay system design

Promising features for the region

System features that support user-friendly interfaces, streamlined data entry, and integration with existing reporting tools are particularly promising for the Chesapeake Bay region. Given the diversity of dealer operations and overlapping reporting responsibilities, tools that reduce duplicative entry, especially when harvester data is already submitted electronically, can significantly improve efficiency. Standardized data fields across agencies could further support consistent reporting and simplify compliance for dealers working across multiple jurisdictions.

Pitfalls to avoid

Several challenges observed in other systems underscore what to avoid in system design and planning. These include overly complex platforms that require extensive onboarding, lack of compatibility with existing state systems, and limited offline or mobile functionality. Systems that do not account for varying levels of technical literacy, infrastructure, or the time it takes to enter data can exclude smaller dealers and strain agency staff. Digital tools that take longer to use than paper forms often face resistance, whereas systems that match or reduce reporting time tend to see higher buy-in. Failing to include stakeholders early in the design process may also result in tools that do not meet operational needs or regulatory goals.

Knowledge gaps

This project was designed to fill a critical knowledge gap: the lack of electronic and trip-level dealer reporting standards for state-managed species in the Chesapeake Bay. Existing systems do not capture real-time purchase data from dealers in a consistent

format, leading to possible mismatches with harvester data, limited quota monitoring, and delayed access for managers. Prior to this project, little information was available on the specific technical, regulatory, and workflow barriers to electronic and trip-level dealer reporting in the region. The findings from Phase 1 directly address this gap by documenting manager and industry perspectives and identifying priority features for system development.

Unique characteristics of the Chesapeake Bay region

The Chesapeake Bay watershed spans parts of Maryland, Virginia, Delaware, Pennsylvania, West Virginia, New York, and Washington, D.C., making it the largest estuarine watershed in the United States. While all states manage state commercial tidal fisheries within their respective waters, this project focuses on MDNR, VMRC, and PRFC, the three authorities directly involved in regional electronic and trip-level dealer reporting efforts. Each entity maintains distinct regulatory frameworks and reporting requirements.

Seafood dealers in this region are primarily small, locally operated businesses. Many also hold harvester licenses and report to multiple agencies, adding complexity to their reporting responsibilities. Because most fisheries in the Bay are state-managed—with fewer federally managed species—coordination among Maryland, Virginia, and the Potomac region is especially important. To be practical and effective, electronic reporting solutions must align with existing ACCSP standards, support shared data fields across agencies, and remain flexible enough to fit different business operations and regulatory needs. The goal is to make reporting as efficient and user-friendly as possible for both managers and dealers.

Methods

Manager requirement gathering

Each agency's primary contact helped identify managers who would contribute to the study, either by completing a survey, participating in an information gathering or validation session, or both. These individuals were chosen because of their hands-on experience with dealer data collection, management, enforcement, or reporting within their agencies.

Surveys

To begin the information-gathering process, managers were asked to complete a brief pre-session survey about their current dealer reporting workflows, challenges, and perspectives on the feasibility of implementing electronic and trip-level reporting (Supplementary materials: Attachment B). The survey was designed by ORP to align with project goals outlined in the proposal and to address key factors influencing dealer reporting system design, agency readiness, and resource needs. Survey questions were tailored to reflect the unique roles and responsibilities of managers while maintaining consistency across agencies for comparison. The survey included multiple-choice

questions, scaled ratings, and open-ended prompts, and was reviewed by agency staff prior to distribution to ensure clarity and relevance. Agencies also shared copies of their paper reporting forms and shellfish buy tickets, which were reviewed to better understand the types of information currently required from dealers.

Sessions

Building on the survey responses, a series of manager validation sessions were held to explore agency-specific needs and priorities in more depth. Separate sessions were conducted with staff from MDNR, PRFC, and VMRC. These sessions followed an agenda that included an overview of existing dealer and harvester reporting processes, discussion of regulatory needs and data use, identification of infrastructure and workflow challenges, and consideration of potential benefits and flexibilities associated with electronic and trip-level reporting. Participants also reflected on how dealer data is currently used in their roles and where gaps exist that electronic or trip-level reporting might address. Open-ended discussion questions and review of pre-survey results were used to prompt conversation.

Following these individual sessions, ORP compiled key takeaways and developed summary documents for each agency. These materials were shared in advance of the final joint session to help identify overlapping priorities and provide a foundation for regional comparison and alignment. The final joint session brought together representatives from all three agencies to discuss feasibility, explore opportunities for standardization, and identify shared goals. Discussions during the sessions were facilitated using a SWOT framework, with a focus on reporting feasibility, data standardization, system integration, and staffing considerations.

Industry requirement gathering

Surveys

Industry outreach was conducted through a survey designed to collect information on seafood dealers' current reporting practices, recordkeeping processes, challenges, and perspectives on transitioning to electronic and trip-level reporting (Supplementary materials: Attachment C). Each participating management agency provided ORP with dealer contact information: MDNR shared a list of the top 65 seafood buyers submitting monthly paper reports; PRFC provided a list of 11 registered buyers; and VMRC provided a list of 50 buyers reporting over 100,000 pounds of seafood annually.

ORP contacted all dealers for whom contact information was available, reaching out by phone and email to explain the project and invite participation. Dealers were given the option to complete the survey online through Google Forms or by phone with ORP staff. In addition to the agency lists, ORP also contacted a small number of additional dealers based on prior working relationships and familiarity with the Chesapeake Bay seafood industry to gather further perspectives. During outreach, ORP asked each dealer who within their business handled reporting and encouraged participation from the person

most familiar with day-to-day reporting tasks. In some cases, staff rather than the business owner were identified as the primary point of contact for accurate feedback.

Three versions of the survey were developed, one for each jurisdiction, to reflect differences in dealer reporting requirements, workflows, and agency readiness to adopt electronic systems. While each version was tailored to its specific agency context, the surveys shared a consistent core structure to support comparison of responses across jurisdictions. Drafts were reviewed by management agency staff prior to distribution to ensure clarity, relevance, and alignment with agency priorities. Each survey included a mix of multiple-choice questions, scaled ratings, and open-ended prompts to capture both structured and narrative feedback. Topics covered business operations, technology use, current dealer reporting practices, seafood safety recordkeeping, attitudes toward electronic reporting and to trip-level reporting, anticipated challenges, and preferred features for future systems. Participation was voluntary, and responses were anonymous during analysis and reporting.

Integration and synthesis session

Following the manager sessions and industry survey outreach, a joint session was organized to bring together managers and industry representatives for MDNR and PRFC. VMRC opted not to participate in a joint session with their industry, as they were not actively exploring electronic dealer reporting at that time. Industry participants reporting to MDNR and PRFC were invited to the joint session based on manager input, specifically if they had completed the survey or indicated interest during outreach.

After the industry survey period closed, ORP compiled all industry survey responses and shared the results with each respective management agency. This allowed agency staff to review industry feedback and determine whether a joint session with industry representatives would be useful. For agencies that chose to move forward, ORP held one-on-one meetings with managers to confirm session goals and ensure alignment on what each agency hoped to gain from the discussion. Managers were also given a preview of the session slides and talking points to help them prepare for their contributions.

Presentation materials summarizing the project goals and survey themes were shared with all participants at the beginning of the session to frame the conversation. Slides were used as visual guides but were not intended to direct or bias participant feedback. The session was facilitated using open-ended prompts designed to encourage participants to share their perspectives on the feasibility of electronic and trip-level reporting, workflow needs, potential barriers to adoption, and opportunities for coordination across jurisdictions. Note-takers recorded input during the sessions, and participation was entirely voluntary. Responses were kept confidential to encourage open and honest feedback.

Results

Management needs and objectives

This section highlights key takeaways from fisheries agency managers across the Chesapeake Bay. It's intended to promote transparency and help move toward a practical, efficient, and regionally coordinated approach to electronic and trip-level dealer reporting.

Summary of manager survey responses

Background and role

A total of 16 managers completed the pre-session surveys, including those from MDNR (9 staff and 2 additional staff from the Maryland Department of Health or MDH), PRFC (1 staff), and VMRC (4 staff). Respondents held a variety of roles related to seafood dealer data, including program managers, reporting supervisors, data analysts, IT specialists, division chiefs, shellfish standardization officers, and regulatory staff involved in fisheries reporting, quota management, and permitting. The surveys were developed and reviewed by ORP (4 staff) to ensure alignment with project objectives.

Most managers who completed the surveys (81% or 13) reported having more than five years of experience working with dealer data reporting or management. The remainder included two respondents with 1-3 years of experience (13%) and one with less than one year (6%).

Current reporting processes and data management

56% (9) of participants indicated that a dealer reporting process is currently in place. Three participants (19%) reported that no such process exists, while two (13%) were unsure. Another two respondents (13%) clarified that reporting is limited—either required only for certain species or maintained solely for health department records, rather than as part of a formal dealer reporting system.

Maryland

Maryland respondents described a hybrid seafood reporting system. For state-managed species, licensed seafood dealers submit monthly paper reports, even when no purchases from harvesters occur. These reports are due by the 10th of the following month and are manually entered by MDNR staff. Dealers receive an annual packet (in January) with twelve monthly barcode stickers and a blank reporting form to make copies. Two main types of Tidal Fish Dealer licenses exist in Maryland: a standard Tidal Fish Dealer license for individuals without a commercial harvest license, and a Tidal Fish Dealer Add-on license for commercial harvesters. The add-on license allows harvesters to legally sell, process, or resell their own catch. Harvesters who only sell their personal catch using the add-on license are not required to submit a monthly dealer report. Harvesters who only sell their personal catch using the add-on license are not required to submit a monthly dealer report.

Shellfish dealers have additional reporting requirements, including weekly submissions and buy tickets that capture trip-level harvest and weekly tax details. There is an existing voluntary shellfish dealer module within FACTS™ allowing dealers to submit reports electronically for state-managed shellfish (Supplementary materials: Attachment D). As of 2024, two dealers had used this module, submitting a total of 10 buy tickets. For federally managed species, a small number of Maryland dealers (<6) use the SAFIS eDealer platform. While the overall dealer reporting framework is consistent across fisheries, requirements vary depending on species, license type, and reporting format. Crabs and finfish are typically reported monthly in summary form, while shellfish reporting is more detailed. Despite these systems, compliance with monthly dealer reporting remains inconsistent—likely due to variable awareness and limited enforcement.

On the harvester side, Maryland operates FACTS™, which collects trip-level reports electronically. In 2024, 718 individuals submitted trip reports through the system for all fisheries (shellfish, blue crab, finfish, and charter). This included 446 participants who submitted at least one blue crab trip and 102 who submitted at least one finfish trip. Of those blue crab reporters, only 10 operated exclusively in the oceanside bays. SAFIS eTrips is also used by some harvesters, including for certain state-managed species. In 2024, 161 finfish harvesters submitted SAFIS reports statewide (including "did not fish" submissions), with 19 active in the Chesapeake Bay and 31 in the ocean region. Similarly, 245 crab harvesters submitted SAFIS reports, with 88 active in the Bay and one in the ocean region. Despite the availability of electronic systems, most harvesters still rely on monthly paper forms.

Managers noted that despite some challenges, the current dealer system produces valuable data. It helps estimate dockside value through dealer-submitted average price data by species, though reports must still be printed and mailed, faxed or emailed. Finally, MDH-certified shellfish dealers follow additional health-related reporting protocols, which are separate from MDNR's requirements.

Potomac

PRFC currently requires dealer (or buyer) reporting only for oyster purchases. Buyers must be listed on the ICSSL (Interstate Certified Shellfish Shippers List), hold a license from either Maryland or Virginia, and obtain a PRFC Registered Buyer's License. Reporting is conducted using carbon-copy paper tickets submitted within a week of each oyster purchase. These tickets capture detailed transaction data including date, harvester tag number, quantity purchased, price, and seller's signature, with copies distributed to the buyer, harvester, and PRFC. Buyers must also submit a Weekly Reconciliation Report each Thursday, which includes ticket copies, total bushels purchased, taxes paid ($2.00 per bushel), and a signed summary. Reports are entered into PRFC's database and audited bi-monthly against harvester data to identify discrepancies. If issues are unresolved, they may be escalated to a Commission hearing, though this is rare. For crab and finfish, PRFC does not manage a formal dealer reporting system or issue dealer licenses. Instead, harvesters report their buyer's name on weekly harvest reports using an open-ended field, which is not linked to any licensing system in Maryland or Virginia. The oyster buyer

reporting process has contributed to improved public health tracking and more accurate tax collection through routine auditing, which helps fund oyster restoration efforts.

Virginia

In Virginia, dealer reporting is species-specific. Dealers handling quota-managed federal species such as striped bass, horseshoe crab, black drum, speckled trout, and eel are subject to monthly reporting requirements and must obtain special permits. The data they submit is entered into species-specific quota tracking systems (paper or electronic) to support management and enforcement. For other fisheries where no formal reporting process is in place, all dealers are still required to hold a valid Buyers Business Place License or Buyers Truck License to purchase directly from harvesters. In these cases, harvesters report their sales to a documented dealer or buyer, and dealers must retain purchase records for at least one year to support audits or quota compliance. Overall, while Virginia lacks a single, statewide dealer reporting system, regulatory controls through species-specific permitting and license-based accountability provide a framework for oversight. Virginia's system has proven useful for supporting compliance and quota tracking for species with specific reporting requirements.

Challenges, concerns, and infrastructure constraints

Across all three jurisdictions, the most frequently reported challenge with trip-level dealer reporting was ensuring compliance by dealers (80% or 12 out of 15 respondents; Fig. 1). Data accuracy (60% or 9) and hesitancy to transition from paper-based reporting and integration with existing systems (53% or 8) were also common concerns, followed by increased administrative burden (40% or 6). Maryland cited a broader range of challenges overall, with 80% (or 8 out of 10) identifying compliance issues and 60% (or 6) citing both system integration and hesitancy to transition. Virginia's concerns closely mirrored those of Maryland, though with slightly fewer mentions across each category. PRFC reflected concern primarily with administrative burden and system integration.

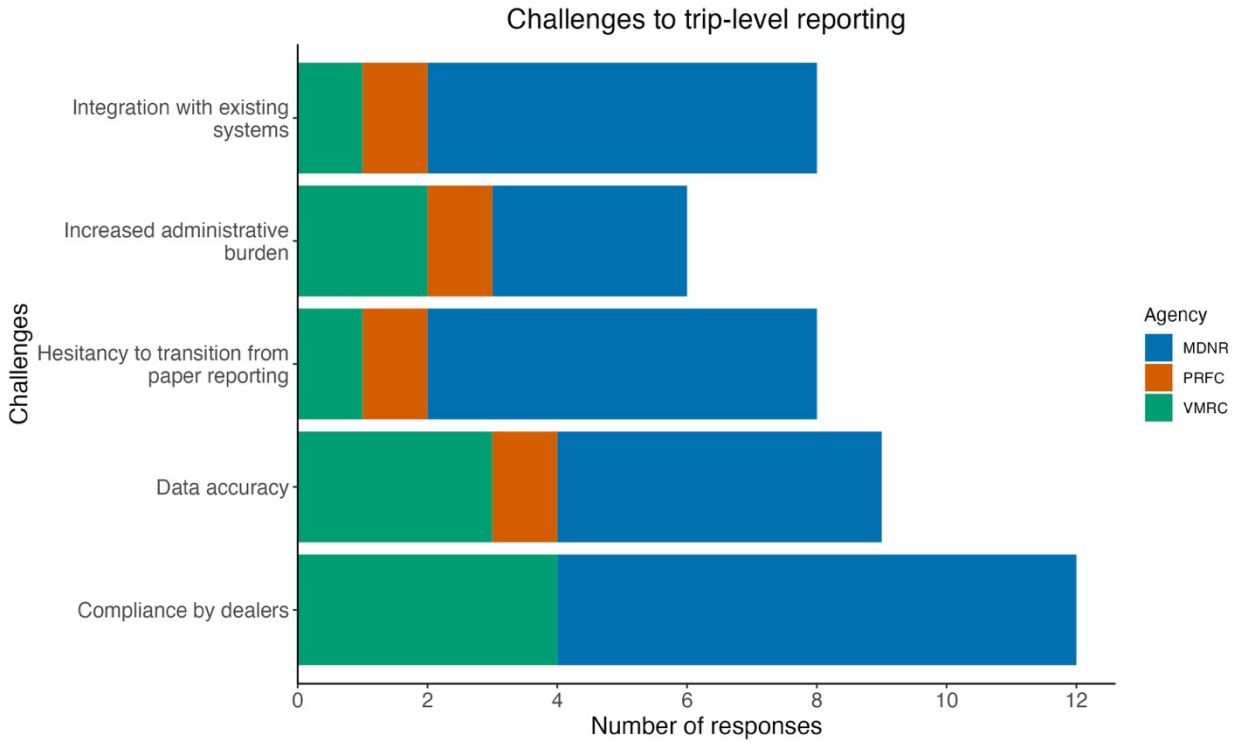

Figure 1. Challenges to implementing trip-level dealer reporting, as identified by managers.

User adoption and training was the most frequently cited technical constraint across jurisdictions for electronic reporting, mentioned by 67% (10 out of 15) of respondents (Fig. 2). Limited or unreliable internet access was the next most common concern, cited by 60% (9 total) of Maryland and Virginia respondents. Outdated or incompatible hardware (7 total) and lack of technical support (8 total) were also frequently noted. Maryland respondents highlighted the broadest range of issues, with 70% (7) citing user adoption, and half or more citing internet access, outdated hardware, legal/regulatory compliance, and technical support. Virginia responses aligned with Maryland's but also included one mention of administrative and policy constraints. Potomac's response mirrored Virginia's, identifying issues with hardware, support, user training, and scalability.

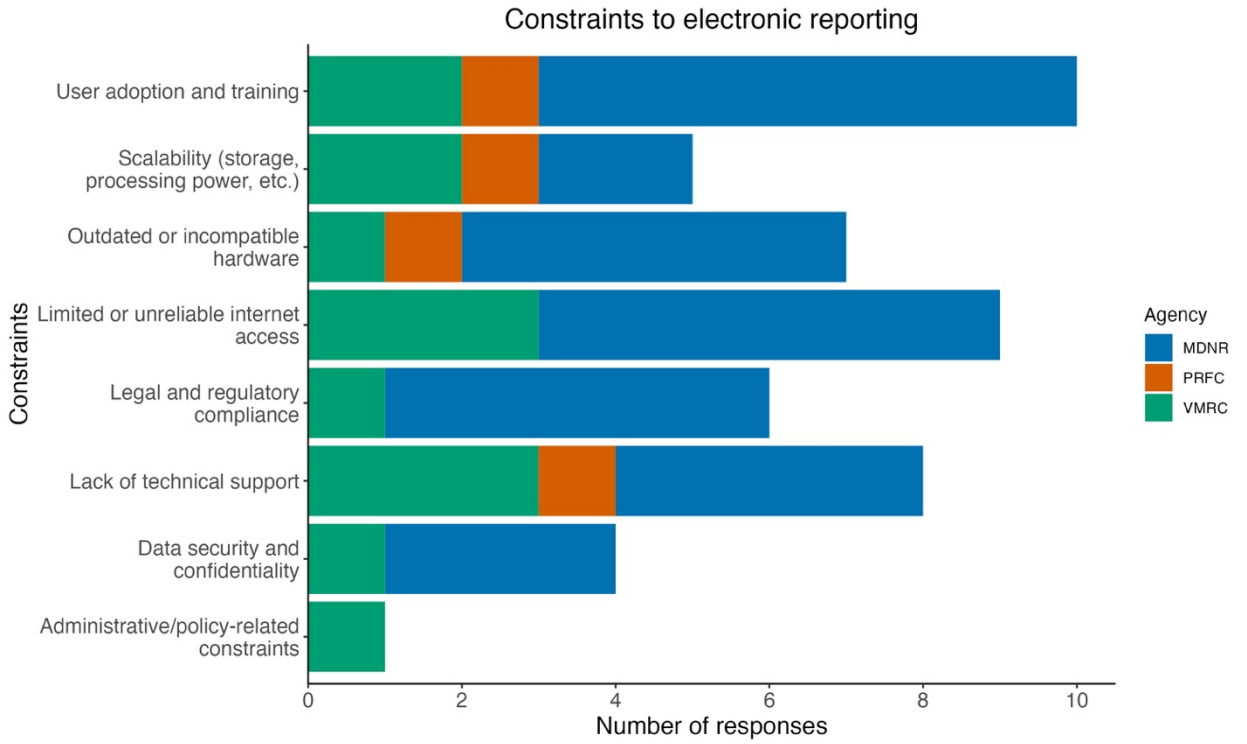

Figure 2. Technical constraints to electronic dealer reporting, as reported by managers.

Use of dealer data and opportunities for improvement

Dealer data is used across jurisdictions to support a range of management, compliance, and monitoring functions. In Maryland (10 total), the data is used for cross-referencing with harvester reports, assessing compliance, informing enforcement, supporting stock assessments, and estimating dockside value. It also helps in identifying active dealers and improving traceability. While some staff noted limited direct use in their roles, they emphasized the need for better integration of harvester and dealer data. In the Potomac (1 total), dealer data is used to monitor oyster harvests by location and verify tax payments. Its timely submission makes it a more reliable source for auditing harvest activity and reconciling discrepancies. In Virginia (2 total), dealer data is central to quota management and compliance monitoring, with one respondent indicating it is used daily to track landings and support regulatory enforcement. Most managers rated dealer data as moderately important to their role, with the majority selecting a 2 or 3 on a 5-point scale (Fig. 3). Only three respondents across all jurisdictions rated it as very important.

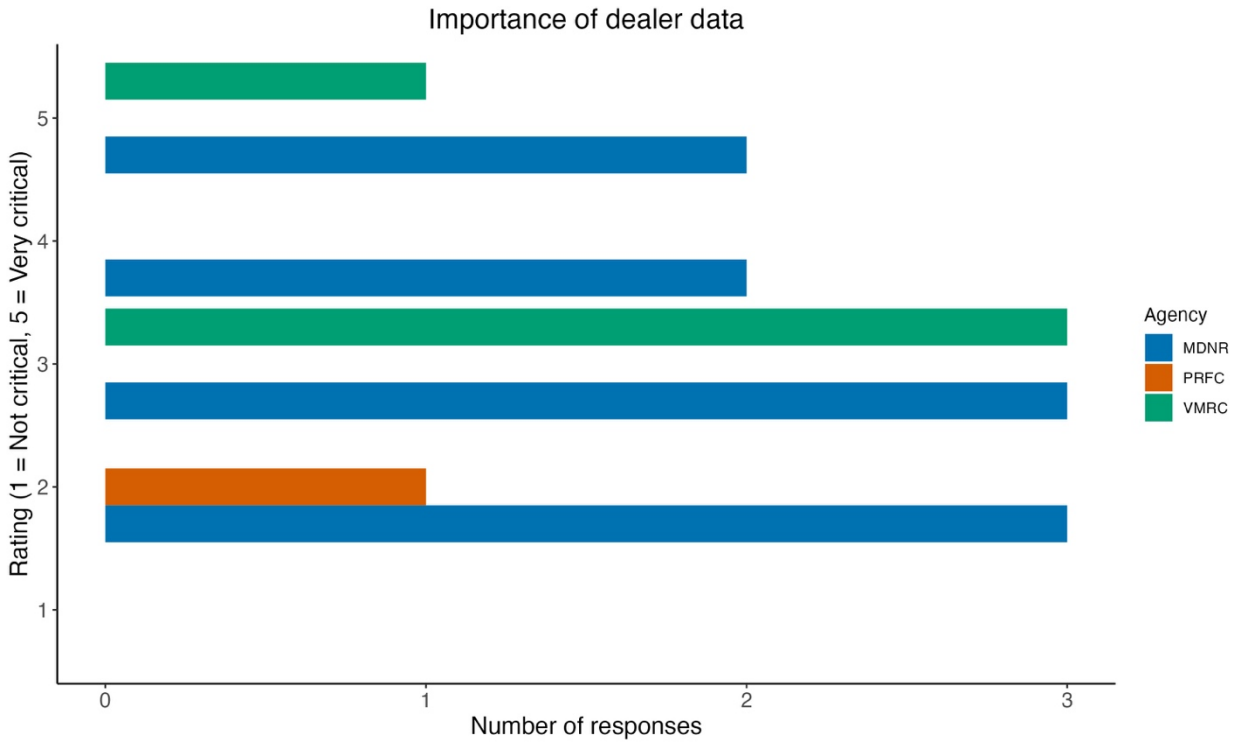

Figure 3. Ratings of how critical dealer data is to managers' roles.

Across all three jurisdictions, dealer data is most commonly used to inform quota management, regulatory compliance, and enforcement actions (Fig. 4). Maryland respondents reported the broadest use across management areas, particularly for stock assessment (67%) and public health monitoring (44%). In contrast, Virginia responses focused primarily on quota management and compliance (each cited by 67-100%), while Potomac emphasized public health and compliance.

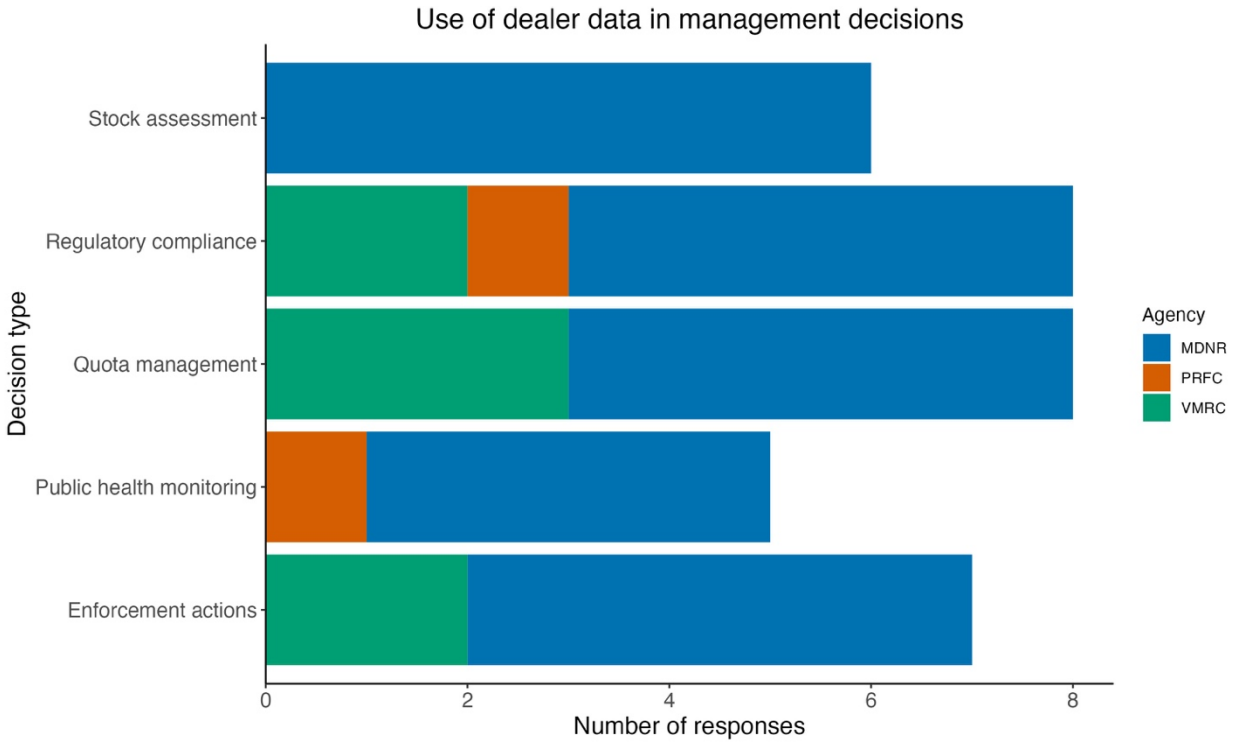

Figure 4. Manager responses on how dealer data is used in management decisions.

Managers across Maryland, the Potomac region, and Virginia identified important data gaps that electronic and trip-level dealer reporting could help address, each emphasizing distinct needs based on their jurisdiction's current limitations and workflows. In Maryland, managers described challenges with validating harvest data—particularly in finfish and crab fisheries where oversight is limited—and emphasized that trip-level reporting could improve cross-verification between harvester and dealer submissions. Several noted that current paper systems limit the ability to capture unlisted species, enforce timely submissions, or collect reliable pricing data. They emphasized that real-time, trip-level data could improve data quality and utility for stock assessments, compliance tracking, and evaluating the economic impact of commercial fisheries.

In the Potomac, the manager highlighted the burden of staff time spent on data entry and corrections, noting that a key benefit of electronic dealer reporting would be automated user validation, such as drop-down fields for tag numbers. This would reduce common data entry errors and eliminate time-consuming follow-up with dealers to clarify submissions, streamlining both reporting and verification processes.

Virginia managers focused on two specific gaps: the lack of reliable pricing data and the absence of dealer-reported poundage to validate harvester submissions. They noted that while harvester data is often stronger for details like gear type and time of harvest, dealer data is generally more accurate for landed amounts. Without access to comparable dealer records, it becomes difficult to conduct robust quality-assuring and quality-controlling (QA/QC) or ensure the accuracy of reported landings, particularly for quota-managed species.

Training and support

Managers across Maryland, the Potomac region, and Virginia identified several potential flexibilities and business tools that could encourage broader adoption of electronic and trip-level dealer reporting, though preferences varied slightly by jurisdiction (Fig. 5). In Maryland (9 total), the most frequently cited features included dealers accessing to their own data (5), simplified audits (4), customizable reporting options (4), and the ability to work offline (4). Integration with accounting software (e.g., QuickBooks) was also a priority for some Maryland staff (4), highlighting the importance of reducing duplicate data entry. Virginia respondents (3 total) most strongly emphasized phased implementation (3) but also highlighted integration with the dealer's accounting systems (2), customizable reporting (2), and expense tracking tools (2) as critical features. While offline capabilities were mentioned in all three regions, they were slightly less emphasized in Virginia compared to Maryland. Overall, responses suggest that flexibility, streamlined reporting, and compatibility with existing business practices will be essential for successful system adoption.

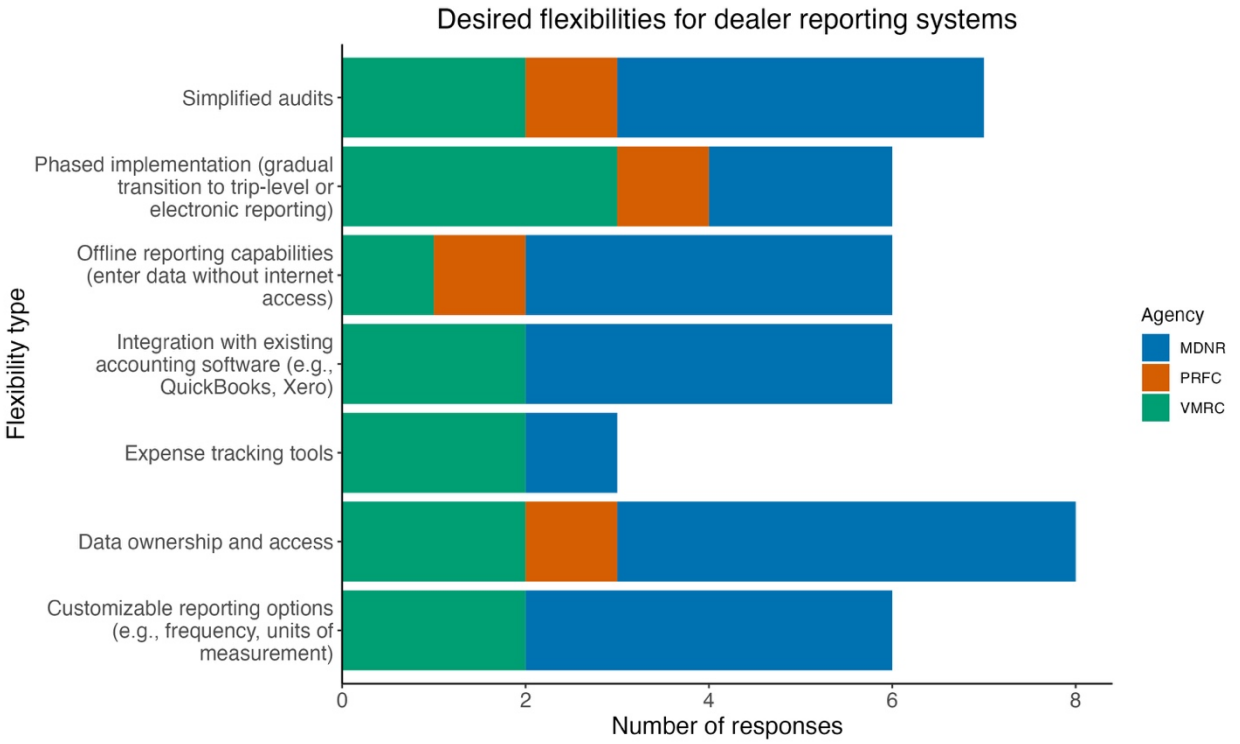

Figure 5. Desired flexibilities and business tools to support dealer reporting system adoption, as identified by managers.

Across all three jurisdictions, managers emphasized the importance of training that is practical, accessible, and suited to different dealer needs. In Maryland, they recommended a mix of video tutorials, online training, printable guides, and a helpline. Some also supported offering in-person sessions depending on a dealer's comfort level with technology. Potomac suggested 1-2 in-person trainings, supplemented with annual

step-by-step guides and optional one-on-one help. Virginia managers supported hands-on training and a full-time help desk. They also highlighted the need for species identification support. Some suggested that a data auditor could help improve accuracy and assist with troubleshooting.

Managers across all jurisdictions expected short-term increases in staff workload during the transition to electronic and trip-level dealer reporting. However, the degree of impact and type of support needed varied by agency. Maryland managers described a shift in tasks from manually entering paper reports to QA/QC digital entries. They also noted challenges related to training, dealer compliance, and HACCP (Hazards Analysis and Critical Control Points) recordkeeping. They emphasized the need for helplines, onboarding support, and tools to reduce reporting errors. PRFC, operating with a small staff and seasonal peaks, anticipated major disruptions. They emphasized the need for early implementation, a troubleshooting hotline, and clear training materials. Virginia managers had mixed expectations. One anticipated that electronic reporting would reduce staff workload. Others pointed to staffing shortages and emphasized the need for IT integration and dedicated staff to manage the transition.

Summary of survey responses beyond the standard questions

In open-ended comments, managers—especially in Maryland—noted that some seafood dealers have expressed support for electronic reporting, reinforcing the value of transitioning. While digital systems won't eliminate human error, they offer faster access to data, which managers viewed as critical for improving responsiveness in quota enforcement and compliance. Managers stressed the importance of planning rollouts outside peak fishery seasons and allowing flexibility for seasonal closures. These insights echo broader themes of ensuring system usability, reducing administrative burden, and supporting long-term efficiency gains.

Key findings from individual manager sessions

A total of 21 participants attended the individual manager sessions, including MDNR (10 staff and 2 additional staff from the Maryland Department of Health), PRFC (4 staff), and VMRC (5 staff). ORP (4 staff) facilitated all individual manager sessions. These sessions expanded upon the survey responses and allowed managers to provide more detailed insights into their agency-specific reporting workflows and challenges.

Maryland

The Maryland in-person manager session added key clarifications to the current dealer reporting process, legal framework, and adoption challenges that were not captured in the survey.

- *Legal and regulatory enforcement gaps*: Managers emphasized that monthly dealer reports are not legally required, unlike shellfish buy tickets, which are tied to tax collection and have enforceable penalties. This discrepancy contributes to inconsistent compliance and limits data validation. There was discussion of

potentially changing regulations to require monthly reports, though that would require internal approval and a formal timeline.

- *Voluntary interest and existing adoption*: While some dealers are still paper-based, larger dealers have expressed interest in electronic reporting, particularly integration with business tools like QuickBooks. Approximately six dealers are already using FACTS™ (Maryland's existing electronic reporting system) voluntarily for shellfish, though only two submitted tickets in 2024. This pilot program is still in its early stages with few users.
- *Compliance challenges with non-shellfish fisheries*: There is considerable variability in how crab and finfish transactions are documented—ranging from formal receipts to verbal agreements. This makes it difficult to verify reports or match harvest and purchase records.
- *Regional pricing disparities and data limitations*: Currently, dockside value is calculated using species-level averages derived from summary dealer reports, but these are known to be regionally biased (e.g., female crab prices differ by region). Managers noted that trip-level dealer data would significantly improve economic impact estimates and pricing accuracy, reducing reliance on extrapolated averages.
- *MDH coordination and shellfish traceback*: MDH staff highlighted that buy tickets are accepted as legal receiving records for shellfish traceability, and that some small dealers still rely on hand-written logs. Tags and sales records must meet strict FDA and MDH standards for traceback, especially when shellfish are stored overnight or sold retail.
- *Transition considerations*: Managers agreed that electronic reporting would increase short-term workload, especially for those handling QA/QC and summary data entry. They also discussed concerns around how far back data should be collected from dealers that had missing or late monthly dealer reports when transitioning to an electronic and trip level system. A suggestion was made to consider offering forgiveness or setting thresholds for historical data entry.
- *User readiness*: There was strong consensus that training and system design must account for a wide range of user comfort levels, from tech-savvy operations to those requiring one-on-one support. Managers felt that modular, downloadable tools would help ease the transition for most users.

Potomac

The session with PRFC revealed operational realities and transition barriers not reflected in survey responses, especially concerning data workflows, enforcement limitations, and resource constraints.

- *Capacity concerns and administrative burden*: PRFC staff described significant workload issues related to managing both physical and digital reports. While PRFC intends to maintain paper records even with a digital transition, the current process is already at capacity, with staff expressing that "changing the process is over our capacity at some point." Entry and verification of oyster buyer reports require spot

checks and manual audits that staff say are no longer sustainable due to volume increases and limited time.

- *Timing and seasonal constraints*: The November–December license renewal period already overwhelms staff. Managers emphasized that any transition to electronic dealer reporting must avoid these peak times. They suggested implementation and training occur earlier in the year to prevent backlogs and ensure support capacity.
- *Data quality and reporting mismatches*: PRFC routinely encounters discrepancies between buyer and harvester reports—about 400 issues in 2023 alone—requiring prioritization of major mismatches and reducing the agency's ability to fully audit smaller discrepancies. Buyers often record incorrect ticket counts or dollar amounts, and harvester data is frequently late or incomplete. Spot checks and manual reviews are currently used to flag outliers, but this process is resource-intensive.
- *Technology barriers among stakeholders*: Some commissioners and participants in the PRFC region have limited access to or familiarity with digital tools, such as email or modern cell phones. This presents challenges for full electronic adoption and suggests that maintaining dual systems (paper and digital) may be necessary for the foreseeable future.
- *Functionality needs and system integration*: Managers stressed that a successful electronic system must include features like invoice generation, tax tracking, and real-time data access, particularly because buyer reports serve a fiscal role. Integration with fiscal systems and automated validations (e.g., dropdowns for license numbers) were seen as critical to avoid duplicate entry and reduce manual errors.
- *Public health and quota management relevance*: Dealer data is central to PRFC's public health monitoring, as it tracks oysters from harvest through sale using tags and buy tickets. It also informs quota management decisions at the bar level, especially within PRFC's rotational harvest program. However, the lack of trip-level dealer data limits responsiveness and forces reliance on summary-level data that may not reflect trends in real time.
- *Need for outreach and education*: Current efforts are limited—many harvesters submit incomplete forms and fail to read the oyster booklet. While new licensees are offered training, it is not always accepted, and the individual reporting may not be the same person who obtained the license. Managers noted the need for broader and more consistent outreach if electronic systems are to be successfully adopted.

Virginia

The Virginia manager session revealed operational insights, internal decision-making dynamics, and system-level details not captured in the survey, providing a clearer picture of both opportunities and obstacles for electronic dealer reporting in the state.

- *Mandatory phased rollout lessons*: VMRC successfully transitioned harvesters to monthly electronic reporting through a phased, mandatory rollout beginning in 2009 with oysters, followed by crabs and then finfish. Managers emphasized that this

was essential for success—voluntary reporting was not effective, and dual systems created staff burdens. Paper data entry was ultimately brought in-house due to third-party contractor failures. Managers noted that gradual implementation helped manage staff workload and user support needs over time.

- *Strong internal capacity and auditing structure*: VMRC has a structured system for dealer audits, including audits by species, by day, and by dealer. They prioritize the top 50 dealers by landings annually and conduct targeted audits depending on species or enforcement needs.
- *Current dealer data gaps and duplication issues*: Many quota-managed species still rely on paper buyer reports or call-in systems (e.g., striped bass, speckled trout, black drum, horseshoe crab), which are managed manually and vary by permit. Staff cited challenges matching harvester and dealer data due to inconsistent dealer naming, missing receipts, or buyers operating multiple locations under similar names. While buyer reports help QA/QC harvest reports, no centralized electronic system exists for dealer reporting across all species, and current systems rely on manual workarounds.
- *Lack of regulatory authority to mandate dealer reporting*: Due to administrative constraints, regulatory changes currently require Atlantic States Marine Fisheries Commission (ASMFC) or Mid-Atlantic Council mandates. This severely limits the agency's ability to require dealer reporting, even if there is internal support for it.
- *Technical limitations of third-party apps and need for standardization*: Dealers currently use a mix of SAFIS (e.g., eDealer) and third-party platforms (e.g., BlueFin). This causes data reliability and syncing issues, especially when APIs don't behave as expected. Some dealers are hesitant to switch platforms due to cost, staff training burdens, or comfort with their current system. VMRC would prefer to standardize reporting through a single, existing platform like eDealer that is free, tested, and already integrates with federal systems.
- *Built-in validation and compliance measures*: VMRC's electronic system for harvesters includes built-in safeguards—such as bushel and poundage limits—to prevent data entry mistakes and flag outliers for review. Non-compliant users are flagged after missing three reminders, blocked from activity, and followed up with by law enforcement. Reports are timestamped and have held up in court. However, there is still a delay in reporting, as many harvesters input data at the end of the month rather than daily.
- *Staff-driven support system with user feedback loop*: Harvesters can submit feedback directly through the system, and one staff person is assigned to manage online reporting issues. Calls and feedback are logged and escalated if needed. Training is ongoing and provided through staff visits, phone support, and tutorial videos. They also trained public library staff to assist harvesters using library computers to access the system. Though systems exist, training materials need updating, and staff emphasized the importance of a consistent feedback-response loop.

- *Confidentiality concerns and limited data access*: Dealer data is currently used internally and not shared outside the agency. Law enforcement and external entities like Department of Health must file formal requests to access the data.

Together, the manager sessions across Maryland, the Potomac, and Virginia revealed jurisdiction-specific barriers and shared priorities not fully captured in the surveys. Each agency emphasized the importance of realistic rollout timelines, system flexibility, and support tailored to both staff capacity and user readiness. While operational structures and regulatory authority vary, there was broad agreement that trip-level dealer data could improve compliance, traceability, and quota management. These findings, along with survey results, were compiled by ORP into this report and shared with all participating managers ahead of the final joint session (Supplementary materials: Attachment E). The goal was to ensure transparency, provide a common baseline of understanding, and help inform the collective discussion about the feasibility and design of regional electronic dealer reporting.

Results of the final joint manager session

The final joint manager session was held virtually with 15 participants from MDNR (5 staff), MDH (1 staff), PRFC (5 staff), and VMRC (4 staff). The session was facilitated by the ORP (4 staff) and focused on validating findings from earlier surveys and individual manager sessions, while exploring cross-jurisdictional opportunities for enhancing seafood dealer reporting across the Chesapeake Bay. Managers agreed that full regional standardization would be beneficial in the long-term but acknowledged that agency-specific approaches are currently necessary due to differing regulatory structures, reporting systems, and industry readiness. However, they supported coordinating on shared data fields, unique identifiers, and outreach strategies to build alignment over time. There was consensus on the need for unique harvester and dealer identifiers to improve cross-agency data matching and reduce duplication. Integration between harvester and dealer data remains a challenge, especially for matching quantities, trip dates, and formats across reporting platforms. Cross-border landings were identified as a persistent enforcement and traceability challenge.

Participants emphasized that while some systems (like FACTS™ and SAFIS) support database integration, paper reports continue to create delays due to manual processing. Managing dual systems adds staff burden, and reducing duplicative reporting—particularly for harvesters who also act as dealers—should be a key design goal. Managers also discussed reporting frequency, noting that while trip-level reporting offers benefits for accuracy and enforcement, daily submission requirements may not be feasible for all dealers. Tools to flag discrepancies between harvester and dealer reports were viewed as critical for effective QA/QC and quota monitoring. Finally, the group recognized shared goals around improving traceability, supporting public health monitoring, and ensuring timely quota tracking. While a fully unified platform is not currently achievable, the session reinforced the value of regional collaboration on technical standards, enforcement

alignment, and coordinated outreach—if flexibility remains for state-specific implementation.

Industry needs and objectives

The following section summarizes insights from seafood dealers, harvesters, and other industry stakeholders across the Chesapeake Bay. Responses were collected anonymously through a regional outreach survey. These findings are intended to promote transparency and guide the development of a practical, flexible, and business-friendly electronic reporting system that reflects the realities and needs of the industry.

Summary of industry survey responses

Business information

A total of 41 businesses participated in the survey, including 22 from Maryland, 5 from the Potomac region, and 14 from Virginia. Most reported engaging in multiple types of business activities. Wholesale was the most common business type across all three regions (82% or 18 businesses in MD, 100% or 5 Potomac, 93% or 13 VA), followed by retail (73% or 16 MD, 20% or 1 Potomac, 43% or 6 VA) and processing (50% or 11 MD, 40% or 2 Potomac, 36% or 5 VA). One Maryland business also reported operating a mobile raw bar for shellfish.

Most businesses indicated they use either a mobile device or desktop computer for business purposes (91% MD, 100% Potomac, 93% VA). Businesses reported using these tools for a range of purposes: business transactions were the most common (90% MD, 100% Potomac, 71% VA), followed by inventory tracking or management (50% MD, 80% Potomac, 46% VA), social media marketing (55% MD, 20% Potomac, 43% VA), and business website management (41% MD, 40% Potomac, 21% VA; Fig. 6). Use of digital tools for retail sales was reported by fewer businesses (41% MD, 40% Potomac, 14% VA). One Maryland business also reported using digital tools primarily for communication.

These findings suggest a high level of digital engagement among seafood businesses across all three regions, particularly for transactions and inventory management. However, engagement with tools for marketing, retail, and communication was more variable, with Virginia businesses generally using digital systems across fewer functional areas than those in Maryland or the Potomac region.

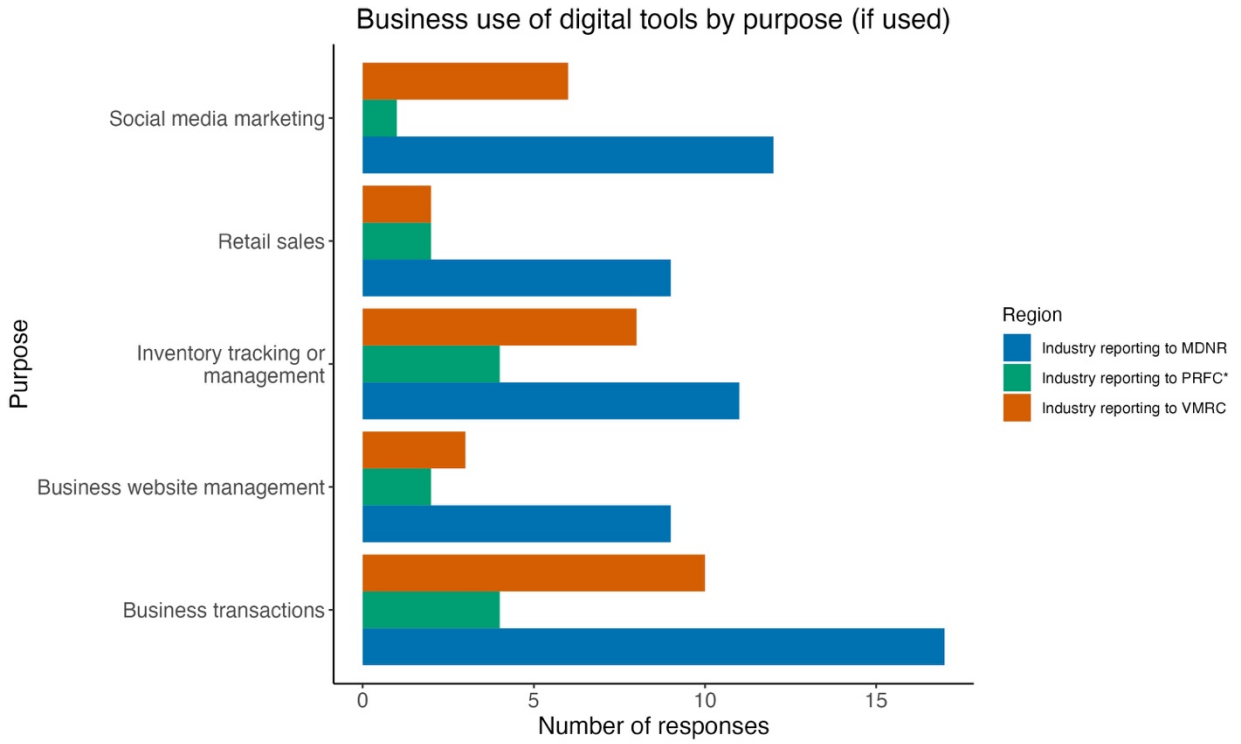

Figure 6. Business use of digital tools by industry, based on response from those who use mobile or desktop devices. *Note: The asterisk (*) indicates that industry reporting to PRFC may also report to MDNR or VMRC.*

Products and partnerships

Businesses across all three regions purchase a wide variety of products from watermen. Crabs and oysters were the most purchased products, reported by 90% of Maryland businesses, 80% of Potomac businesses, and 57% of Virginia businesses (Fig. 7). Finfish were purchased by 40% of Maryland businesses, 25% of Potomac, and 50% of Virginia businesses. Clams and bait were purchased by roughly one-third of Maryland businesses (70%) and more frequently by Potomac businesses (80%), but less so in Virginia (14%). Only one Maryland business reported buying bay scallops. Additional products mentioned in open-ended responses included shrimp, catfish, spiney dogfish, striped bass, channeled whelk, American eel, black drum, conch, spot, and croaker.

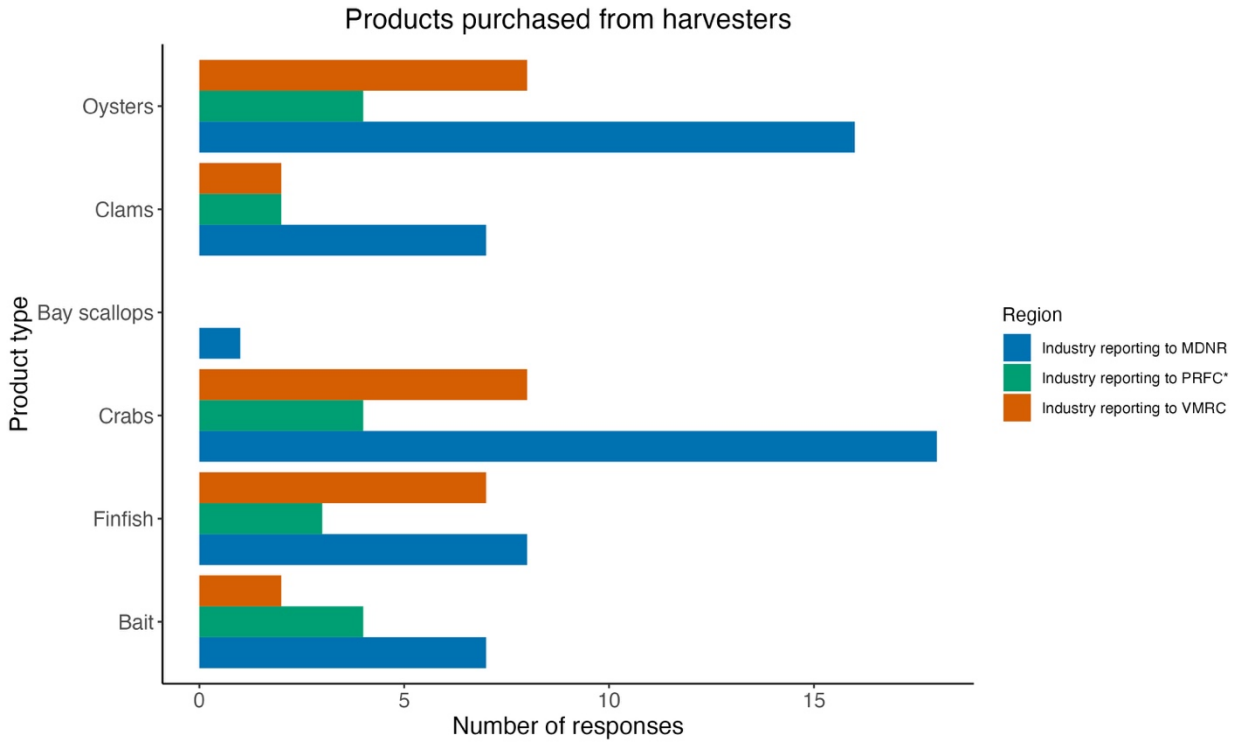

Figure 7. Products purchased from harvesters, as reported by seafood dealers. *Note: The asterisk (*) indicates that industry reporting to PRFC may also report to MDNR or VMRC.*

The number of harvesters selling regularly to dealer businesses varied. Just over half of Maryland dealers (55%) reported working with 1–10 harvesters regularly, while 15% worked with 11–20, and 30% with more than 20. In Potomac, 40% bought from 1–10 harvesters, 20% from 11–20, and 40% from more than 20. Virginia was split between those working with 1–10 (43%) and 11–20 harvesters (43%), with only 14% buying from more than 20 regularly.

When asked how many harvesters they buy from on a typical day, responses suggest Virginia buyers work with more harvesters daily compared to Maryland and Potomac. In Virginia, 64% reported buying from more than five harvesters daily, compared to 53% in Maryland and 60% in Potomac. Smaller-scale daily buying (1–2 harvesters) was more common in Maryland (37%) than in Potomac (20%) or Virginia (29%).

These results highlight regional differences in the scale and diversity of sourcing relationships, with Virginia businesses showing a more consistent pattern of high-volume daily purchasing, while Maryland and Potomac businesses showed more variation in scale and product types.

Dealer reporting practices

Seafood dealers across Maryland, the Potomac region, and Virginia use a variety of methods to track sales and manage their operations. Among all respondents (n = 41), the most common approach was maintaining paper records, reported by 93% (or 13) of dealers in Virginia, 77% (17) in Maryland, and 40% (2) in the Potomac region. About half of

respondents in each state also reported maintaining digital records (Maryland: 50% or 11, Potomac: 40% or 2, Virginia: 57% or 8). Roughly one-third of all respondents (n = 18) indicated that they issue receipts directly to harvesters. A smaller number (4) use specialized tools or systems such as QuickBooks or BlueTrace to manage their records. Notably, one Virginia respondent emphasized that receipts are effectively entered into VMRC's harvester's electronic catch reporting system, highlighting how buyer and harvester processes may intersect.

The methods used to track sales provide important context for understanding how dealers engage with required reporting systems in each jurisdiction. While some maintain only internal records, others are subject to formal reporting requirements set by state or interstate agencies. The following sections outline these required reporting practices and how dealers in Maryland, Potomac, and Virginia comply with them.

Maryland

Among the 22 Maryland dealer businesses surveyed, the majority (73%) reported submitting monthly buyer reports to MDNR (Table 1). Nearly half (45%) also submit shellfish buy tickets, indicating overlap in reporting requirements for certain product types. Only one dealer indicated using the SAFIS electronic reporting system, while two dealers (9%) reported that they do not submit reports at all. When asked whether they report dealer or harvest activity to entities beyond MDNR, such as federal agencies or neighboring states, most dealers (81%) said no. Only four dealers (19%) reported submitting information to other entities besides Maryland, including other states or federal agencies.

Potomac

Because the Potomac River forms the boundary between Maryland and Virginia, many Potomac seafood dealers also report to either MDNR or VMRC, depending on where they live and operate (Table 1). To account for this overlap, respondents were asked about their reporting practices across all three jurisdictions.

When answering for Maryland, 4 out of 5 Potomac dealers (80%) indicated submitting monthly buyer reports to MDNR, and 3 (60%) reported submitting shellfish buy tickets. Regarding Virginia reporting , 2 of 4 dealers (50%) said they submit monthly buyer reports for quota-managed species, while 1 (25%) submits shellfish buy tickets. All five respondents described their reporting and recordkeeping practices for the PRFC, with 4 (80%) submitting weekly harvest reports, 3 (60%) submitting shellfish buy tickets, and 2 (40%) submitting weekly reconciliation reports. Dealers also reported tracking detailed records such as purchases, sales, harvest quantities, HACCP documentation, and daily intake logs by the harvester.

Most (4 of 5) indicated that they are also harvesters. Feedback on the harvest reporting process revealed a general desire for simplification and digital reporting options. Some found aquaculture reporting overly burdensome and noted the lack of electronic reporting options with PRFC. One respondent shared that they were accustomed to paper reporting and believed the responsibility for logging gear and trip details should fall on the harvester.

Notably, none of the Potomac respondents had ever undergone an audit of their buyer records with PRFC. However, one mentioned that audits related to FDA or health department inspections had occurred.

Virginia

Among the 14 Virginia dealer businesses surveyed, half (50%) reported submitting monthly buyer reports for quota-managed species to VMRC, and just under a third (29%) submitted shellfish buy tickets (Table 1). None indicated using the SAFIS electronic system. However, 7 dealers (50%) stated they maintain records for VMRC, even if not submitting formal reports—typically for audit readiness. Two dealers (14%) said they do not submit reports or keep records, and one reported not holding a buyer's license.

Those who do maintain records described tracking detailed harvest information such as harvester names and IDs, species, quantities, tag numbers, catch locations, and times. Some explained they copy this data directly from fisher (or harvester) reports, while others only track specific species like catfish or rockfish. Only 3 of the 14 dealers (21%) reported submitting information to other entities besides Virginia, including other states or federal agencies.

Table 1. Dealer reporting practices by region and agency, as described by seafood dealers. Responses reflect the type of reporting submitted to different agencies. Some participants also indicated whether they do not submit reports or maintain records for certain agencies.

Fisheries reporting practices	Number of responses
Maryland industry	
MDNR reporting agency (n = 22)	
I submit a buyer monthly report.	16
I submit shellfish buy tickets.	10
I use the SAFIS electronic system.	1
I don't submit dealer reports.	2
Potomac industry	
MDNR reporting agency (n = 5)	
I submit a buyer monthly report.	4
I submit shellfish buy tickets.	3
I use the SAFIS electronic system.	0
I don't submit dealer reports.	0
PRFC reporting agency (n = 5)	
I submit weekly harvest reports.	4
I submit shellfish buy tickets.	3
I submit weekly reconciliation reports.	2
VMRC reporting agency (n = 3)	
I submit a buyer monthly report for quota-managed species.	2
I submit shellfish buy tickets.	1
I use the SAFIS electronic system.	0

I maintain records for VMRC (e.g., for audits).	0
I don't submit reports or maintain records for VMRC.	0
I don't have a buyer's license.	0
Virginia industry	
VMRC reporting agency (n = 14)	
I submit a buyer monthly report for quota-managed species.	7
I submit shellfish buy tickets.	4
I use the SAFIS electronic system.	0
I maintain records for VMRC (e.g., for audits).	7
I don't submit reports or maintain records for VMRC.	2
I don't have a buyer's license.	1

Nearly all Virginia respondents (12 of 14, or 86%) also identified as harvesters. Most described the harvest reporting process as straightforward and easy to complete—typically involving just a monthly report. Several appreciated that reporting responsibility falls on the harvesters rather than the dealers. However, some participants noted challenges. One respondent expressed concern about dealers who act as their own harvesters, citing duplicated effort and a lack of accountability. Another pointed out that reported quantities may not reflect true fish availability due to variables like market demand, gear limitations, and labor constraints.

Nine of the 14 dealers (64%) reported having undergone an audit of their buyer records. Most found the process simple, but a few cited specific challenges such as harvester disorganization (e.g., lost tickets), the inefficiency of relying on paper records, and the difficulty of reconciling mismatched buyer and harvester reports. One participant felt that moving to an electronic system would streamline the audit process. Another noted that using QuickBooks for data entry and organization made audits easier, although limited agency staffing meant only select dealers were typically audited.

Compliance and food safety practices

Most seafood dealers surveyed reported maintaining detailed records to meet seafood safety standards set by their state's Department of Health. Maintaining a HACCP plan was the most common practice, cited by 82% of Maryland respondents, 80% in Potomac, and 86% in Virginia. The majority also tracked product temperature and holding times (Maryland: 77%, Potomac: 100%, Virginia: 64%) and recorded traceability data (Maryland: 77%, Potomac: 60%, Virginia: 64%) to document where and when seafood was harvested or sold.

Sanitation logs were kept by 64% of Maryland dealers, 60% in Potomac, and 71% in Virginia. Similarly, documentation of product freshness and receiving logs were maintained by over half of respondents in Maryland (64%) and Virginia (57%), though far fewer in Potomac (20%). Health inspection records were consistently tracked by most respondents in all three regions, including 77% in Maryland, 80% in Potomac, and 57% in Virginia.

Paper-based recordkeeping remains dominant (Maryland: 68%, Potomac: 60%, Virginia: 79%), while digital systems were used by a smaller share of businesses—only 32% in Maryland, 60% in Potomac, and 29% in Virginia. One Maryland respondent noted the burden of maintaining "a lot of paper," while others shared operational practices that reduce regulatory risk, such as only selling live crabs or completing same-day crab sales. Some Virginia respondents avoid fisheries requiring more extensive health documentation. Random inspections by the Department of Health or marine police were commonly described as routine and manageable, especially for businesses dealing in oysters.

Table 2. Number of seafood dealers reporting specific health compliance practices, organized by industry group reporting to MDNR, PRFC, or VMRC.

Health compliance practices	**Maryland industry** *(n = 22)*	**Potomac industry** *(n = 5)*	**Virginia industry** *(n = 14)*
I maintain a HACCP plan.	18	4	12
I track and record product temperature and holding times (e.g., time/temperature at arrival, storage logs).	17	5	9
I document product freshness (e.g., receiving logs).	14	1	8
I maintain sanitation logs for facilities and equipment.	14	3	10
I keep records of product traceability (e.g., where and when seafood was harvested, sourced, or sold).	17	3	9
I record health inspections and compliance reports.	17	4	8
I maintain paper-based records.	15	3	11
I use digital systems or software for maintaining this information.	7	3	4

Opinions on reporting and record maintenance improvements

Dealers were asked to rate the potential benefit of using an electronic system for reporting and recordkeeping on a scale from 1 (not beneficial) to 5 (very beneficial; Fig. 8). Among Maryland respondents (n = 22), over half (55%) gave the highest rating of 5, indicating strong support for electronic tools. Another 23% gave a neutral rating of 3, while a small portion (18%) rated it as not beneficial (1). All five Potomac respondents rated the potential benefits positively, with three selecting 5 and two selecting 4, reflecting unanimous support. In contrast, Virginia responses were more mixed. Of the 14

respondents, 36% rated the system as a 1, and another 21% selected a neutral 3. Only four respondents (29%) rated it a 5, with minimal support in the mid-range categories.

In Maryland, written comments reflected enthusiasm for digital tools, especially in terms of time savings, streamlined paperwork, HACCP integration, and reduced errors. Several noted that systems like SAFIS already provide value. Still, some voiced hesitation due to lack of training, staff limitations, or fear of complexity—especially for small operations. Potomac respondents echoed these benefits, with a specific call for PRFC to offer tools similar to those of MDNR. One person pointed out generational differences in comfort with technology. Virginia dealers were more cautious. While some saw advantages like lower paperwork and the potential to link with harvester systems, many flagged concerns about added burden, internet access, and system redundancy. Several felt their current reporting system was already simple and effective.

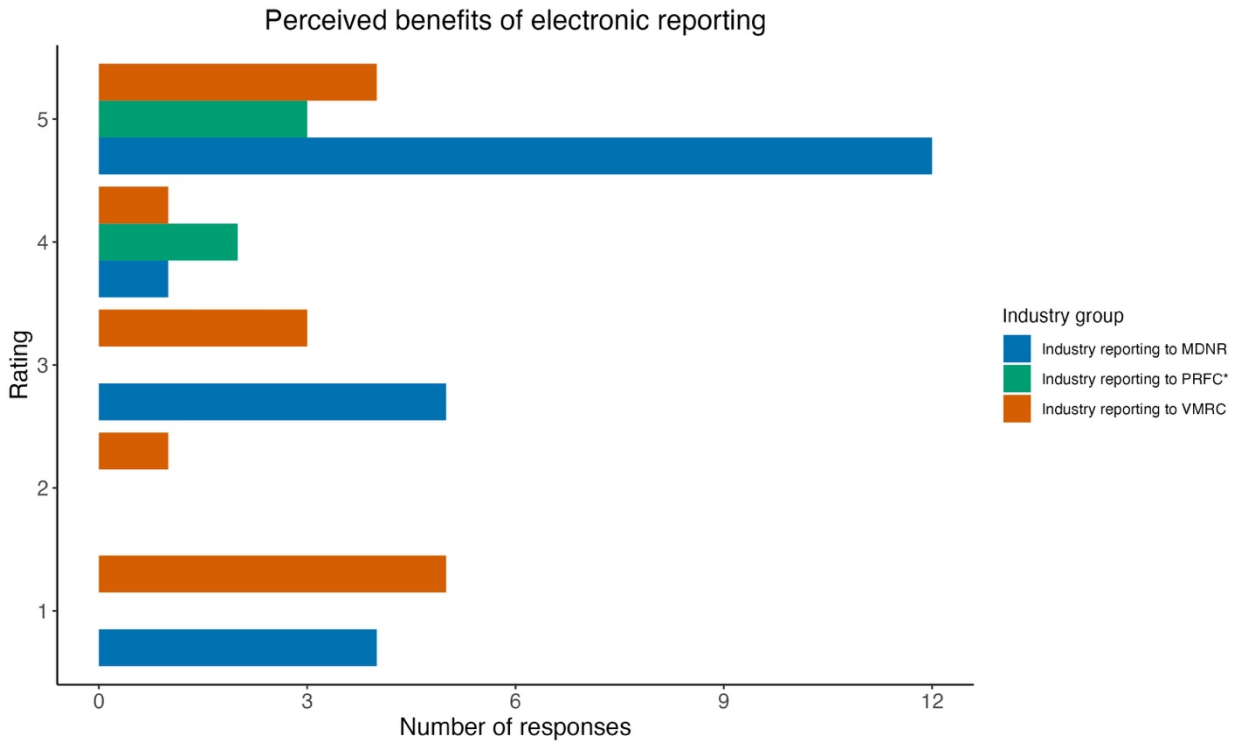

Figure 8. Perceived benefits of using an electronic reporting system, as rated by seafood dealers. *Note: The asterisk (*) indicates that industry reporting to PRFC may also report to MDNR or VMRC.*

Additional questions also explored the value of consolidating Department of Health and fisheries reporting systems. Nearly half of Maryland respondents (10 of 22) and the majority in Potomac (4 of 5) supported consolidation, though others were uncertain or opposed.

When asked about potential benefits of trip-level electronic reporting, many participants agreed it could simplify regulatory compliance (Maryland: 50%, Potomac: 80%, Virginia: 36%; Table 3) and increase transparency and traceability. Others cited advantages like reducing mislabeling, promoting fairness, and supporting sustainability.

Still, a notable proportion—35% of Maryland and 43% of Virginia respondents—felt there were no benefits at all, reflecting skepticism or resistance to change.

Table 3. Perceived benefits of trip-level electronic reporting, organized by industry group.

Benefits of trip-level E-Reporting	**Maryland industry** *(n = 20)*	**Potomac industry** *(n = 5)*	**Virginia industry** *(n = 14)*
Provides an opportunity to verify reported harvest data against sales records.	5	3	4
Encourages fairness by ensuring consistent rules for everyone.	5	2	5
Encourages a sustainable fishery.	3	1	4
Avoids seafood mislabeling.	3	2	5
Simplifies compliance with state regulations.	10	4	5
Enhances transparency and traceability in the seafood supply chain.	8	2	5
None of the above; I don't think there are any benefits.	7	1	6

Challenges and solutions

While most seafood dealers across the region reported that the current dealer reporting process is manageable, a significant number still identified specific challenges. In Maryland, 6 of 19 respondents (32%) said the system is difficult to navigate, pointing to issues such as reliance on paper forms, physical stamps, and redundant information entry. These requirements were especially burdensome for small businesses already juggling daily operations. Several participants also found the oversight roles of MDNR and MDH to be confusing or overlapping, with some stating that MDH was easier to work with because it does not require reporting for both harvest and dealer activities. In the Potomac region, 3 of 5 respondents said they faced challenges with current buyer reporting practices, particularly the manual entry of buy tickets and paper logs. Participants expressed a strong preference for transitioning to an electronic system to reduce time and effort. Similarly, in Virginia, although only 3 of 14 respondents said reporting was challenging, those that did cited disorganized or delayed delivery of monthly reporting folders and frustration with excessive paperwork.

Across all regions, concerns were raised about potential changes related to trip-level (Table 4) or electronic reporting (Table 5). For trip-level reporting, the most common challenges identified included increased workload from frequent data entry (Maryland: 48%, Virginia: 85%, Potomac: 40%) and compatibility issues with current workflows (Maryland: 33%, Virginia: 62%, Potomac: 20%). Many respondents also noted that training

would be necessary to successfully implement trip-level systems. Concerns were also raised about additional regulatory burdens and resistance to change, with several dealers indicating that a shift in practices would require substantial adjustment.

Table 4. Perceived challenges and concerns of trip-level reporting, organized by industry group. Trip-level reporting means recording information for each fishing trip or purchase.

Trip-level reporting concerns	**Maryland industry** *(n = 21)*	**Potomac industry** *(n = 5)*	**Virginia industry** *(n = 13)*
Change is hard.	6	3	3
Training is required to use the system.	9	1	6
Requires frequent data entry for trip-level, increasing workload.	10	2	11
Compatibility with current workflows is difficult.	7	1	8
Could lead to more regulations.	9	3	7

Similar themes emerged in response to questions about electronic reporting. Maryland (50%), Potomac (75%), and Virginia (38%) respondents indicated that adapting to a new system would be difficult. Challenges included the need for training (Maryland: 50%, Virginia: 54%), dependence on reliable internet or technology (Maryland: 40%, Virginia: 69%), and incompatibility with current workflows. A few were also concerned that electronic systems could result in additional regulation.

Table 5. Perceived challenges and concerns of electronic reporting, organized by industry group. Electronic reporting replaces paper forms and allows data entry via phone, tablet, or computer.

Electronic reporting concerns	**Maryland industry** *(n = 20)*	**Potomac industry** *(n = 4)*	**Virginia industry** *(n = 13)*
Change is hard.	6	3	5
Training is required to use the system.	10	1	7
Dependence on stable internet or technology infrastructure.	8	1	9
Compatibility with current workflows is difficult.	10	0	6
Could lead to more regulations.	4	0	4

Despite these challenges, respondents across all three regions identified a range of flexibilities that could ease the transition (Fig. 9). Most Maryland (63%), Potomac (100%), and Virginia (50%) respondents supported simplified data entry tools such as templates or

pre-filled fields. Other highly preferred features included customizable reporting options (e.g., frequency or units), offline entry capabilities, and the ability to export or print summaries for personal records. Several dealers also emphasized the importance of integrating reporting systems with existing accounting software like QuickBooks. Overall, these insights suggest that while there is hesitancy around change, particularly for trip-level and digital reporting, many participants are open to flexible, well-supported solutions that improve efficiency without adding excessive burden.

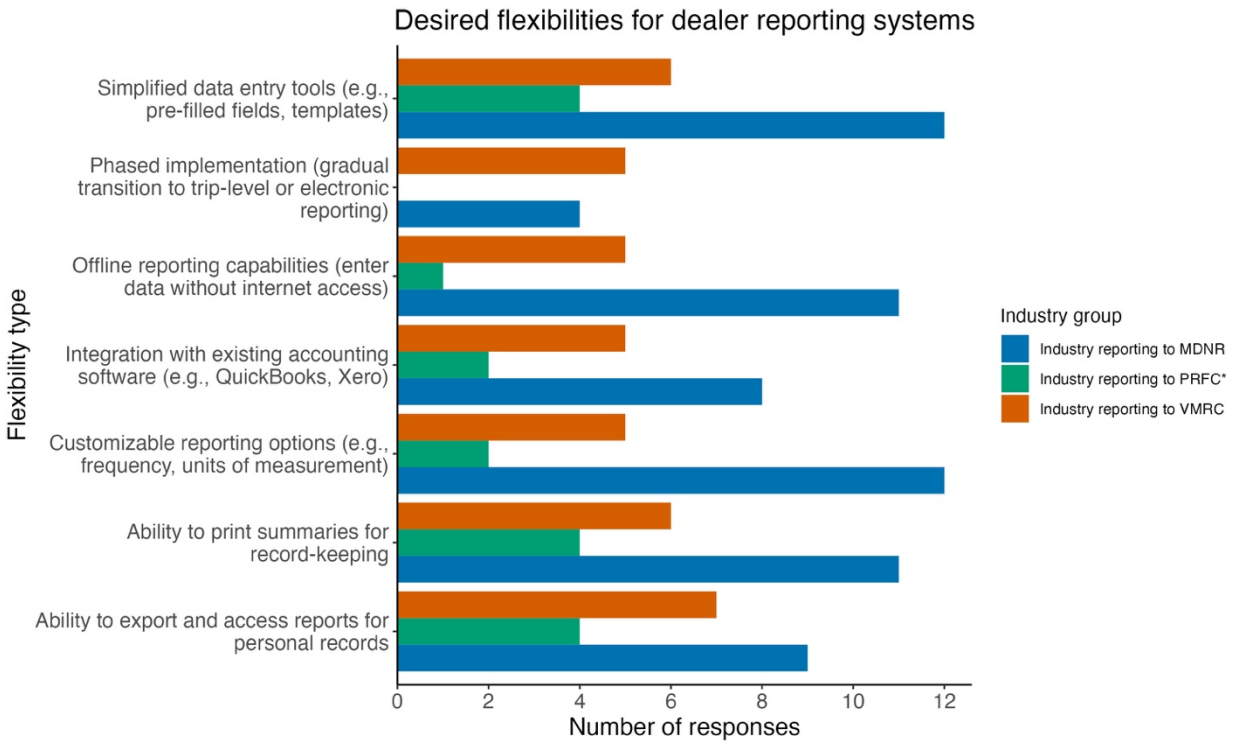

Figure 9. Desired flexibilities and business tools to support dealer reporting system adoption, as identified by industry.

Adopting and testing a new reporting system

When asked what type of training or support would be needed to use a new or enhanced dealer reporting system, respondents across all regions highlighted the importance of accessible, flexible learning tools tailored to different levels of digital literacy.

In Maryland, responses emphasized the need for comprehensive support options, including FAQs, online tutorials, live training (in-person or virtual), and a 24-hour helpline. Several participants noted that older or less tech-savvy users may need extensive, hands-on support and accommodations for language barriers. Others, however, said they felt confident learning on their own with minimal instruction.

Potomac respondents similarly favored simple, direct training formats—especially one-on-one or classroom-style sessions. They emphasized that the system must be user-friendly and that learning how to use it should be intuitive and efficient.

Virginia respondents expressed a range of training preferences depending on the system's complexity. Some said minimal support would be required if the system remained simple and similar to what they currently use. Others requested in-person help, webinars, or local tech support. Several expressed concern that phone-based or online-only instructions would be insufficient and stressed the importance of visual, step-by-step demonstrations.

In terms of willingness to test out a pilot dealer reporting system, half of Maryland respondents (11 of 22) said yes, while 7 were unsure and 4 said no. All four Potomac respondents expressed willingness to participate in a pilot test. In contrast, only 3 of 14 Virginia respondents were willing, while 7 declined and 4 were unsure. These results suggest more hesitancy or skepticism among Virginia industry members, despite general support for testing in Maryland and Potomac.

When asked which type of reporting method they would prefer to test, most respondents across all three jurisdictions selected electronic reporting (Maryland: 80% or 16, Potomac: 60% or 3, Virginia: 63% or 5). This method replaces paper forms with a digital interface accessible by phone, tablet, or computer and allows for submissions by the reporting deadline. A smaller number selected integrated trip-level and electronic systems (Maryland: 15% or 3, Potomac: 60% or 3, Virginia: 22 % or 2), which combine per-trip data entry with electronic submission, effectively replacing monthly paper reports. Very few respondents chose to test trip-level reporting alone, with just one selection each in Maryland and Virginia, and two in Potomac. These preferences suggest that while industry members are generally open to digital systems, most prefer simpler formats over systems requiring detailed trip-level reporting unless well-integrated and streamlined.

Summary of survey responses beyond the standard questions

Participants were invited to share any additional comments or feedback that had not been covered in the survey. In Maryland, two respondents emphasized the importance of developing a user-friendly, streamlined reporting system that aligns with the daily operations of seafood businesses. One respondent, representing a large wholesale processor with two locations and approximately 300 employees, described their existing use of a QA/QC system for shellfish tags and participation in the Global Dialogue on Seafood Traceability (GDST)/Whole Chain traceability reporting. They supported the adoption of an electronic system that includes Enterprise Resource Planning functionality, is highly automated, and easy to use. They also suggested exploring a QR code-based model, as used in other states, where harvesters scan a code to auto-fill commonly reported trip details—allowing for a more efficient and consistent trip-level reporting process.

From the Potomac region, one respondent proposed a practical improvement to data entry: a preference setting that would allow users to create a dropdown list of frequently used harvester names. This feature, they suggested, would help reduce repetitive typing and improve reporting efficiency for dealers who often work with the same suppliers.

Eight respondents from Virginia submitted comments that largely echoed a strong preference for maintaining the existing paper-based system. Many described their current processes as simple, familiar, and well-integrated with tools like QuickBooks and federal systems such as SAFIS and Fish Online. Several noted that the paper-based approach meets all reporting requirements, particularly when dealers already maintain detailed records, including HACCP plans, product receipts, and QA/QC documentation. A recurring concern was the potential for duplicative reporting, especially for species like striped bass where harvester reports already provide much of the necessary information. Respondents cautioned that implementing daily trip-level reporting would place an undue burden on small businesses already managing full workloads. Suggested solutions included allowing dealers to supplement only missing data rather than repeating what harvesters already report and using automated templates or QR code tools to reduce redundancy. One large distributor supported a phased rollout for any new system and emphasized that tools must be tailored to seafood businesses to be successful. Overall, these comments reflected a cautious approach to change, with a clear desire for practical improvements that minimize disruption and reduce the manual burden.

Alignment across managers and industry

A combined manager and industry session was held with 16 participants, including seafood dealers and staff from MDNR (2), PRFC (2), ASMFC (1), and ORP (3). Eight seafood dealers attended, representing a mix of small and large businesses, aquaculture and wild harvest seafood buyers, and operations that report to MDNR and/or PRFC. The session was designed to facilitate open discussion on challenges with current paper-based systems, explore opportunities for transitioning to electronic dealer reporting, and identify shared priorities for future system development, including potential cross-jurisdictional integration. VMRC was invited but chose not to participate, so Virginia was not represented in this session.

Points of alignment

- *Interest in electronic reporting*: Both managers and dealers expressed interest in transitioning to electronic systems to reduce paperwork, improve efficiency, and streamline compliance with reporting requirements.
- *Support for co-design and testing*: There was strong consensus that any future reporting system must be developed collaboratively, with industry, managers, and developers involved in design and pilot testing.
- *Desire to reduce duplication*: Dealers emphasized the burden of meeting overlapping requirements from MDNR, MDH, and PRFC. Managers agreed that aligning fields across agencies, and possibly consolidating submissions into one platform, would improve efficiency.
- *Opportunities to build on FACTS™*: FACTS™ already includes a voluntary shellfish dealer module, though adoption is limited. Dealers expressed interest in expanding

the module and noted that features like automated receipt generation, purchase summaries, and tax exports are especially useful. Pre-filled harvester data from FACTS™ was highlighted as particularly helpful and could reduce manual entry.
- *Need for real-time communication*: Dealers suggested adding messaging capabilities (e.g., as alerts for water closures) within electronic reporting platforms. Managers supported exploring this option.
- *Value of integration with business tools*: Both groups acknowledged the benefit of linking dealer reporting tools with inventory systems, HACCP plans, and tax documentation to minimize redundant data entry and improve record-keeping.

Areas where perspectives differ

- *Reporting responsibility*: Some dealers questioned the need for both harvester and dealer reporting if trip-level purchase data is already being captured. Managers explained that harvester reports include critical information (e.g., gear type, harvest area) that dealers may not collect.
- *Level of regulatory enforcement*: Dealers voiced concerns that more detailed digital reporting could lead to increased enforcement or additional restrictions. Managers clarified that one of the goals of enhanced reporting is to support sustainable fisheries management through improved data accuracy.
- *Technology access and capacity*: While some dealers have already adopted digital tools, others noted limitations such as staff with limited tech skills, lack of internet or device access, and concerns about system complexity or compatibility.
- *Comfort with change*: Managers emphasized the need to modernize and improve compliance, while some dealers (particularly smaller businesses) preferred to start with digitized versions of current paper forms and build from there.

Considerations for regional consistency and flexibility

- S*tandardized data fields across agencies:* Managers supported the idea of harmonizing key fields (e.g., license numbers) to enable interoperability while allowing agencies to maintain their own systems.
- *Flexibility in reporting frequency and format:* Dealers requested options for weekly or monthly reporting, depending on business needs. Managers acknowledge the need to accommodate variability in dealer capacity and operations.
- *Integration across agencies:* Both MDNR and PRFC discussed technical feasibility of integrating systems like FACTS™ with PRFC's reporting structure by adding fields such as Potomac license numbers and NOAA fishing codes. This would allow shellfish dealers and harvesters to use one system with the data being routed to the correct agency on the back end depending on where the harvest was reported to occur.

- *Scalable approach:* Participants agreed on the importance of starting small, focusing on core reporting needs, then gradually adding features based on user feedback.
- *Accessible platform:* There was shared support for ensuring the system is mobile-friendly, works across browsers and devices, and includes offline functionality to accommodate users in areas with poor connectivity.
- *Training and support to increase adoption:* Participants agreed that real-time support (e.g., existing FACTS™ 24-hour helpline), demonstrations, and outreach would be critical for industry adoption.

Discussion

The scoping study generated foundational insight into seafood dealer reporting practices and preferences across Maryland, Virginia, and the Potomac regions. Through surveys, outreach, and facilitated discussions, the project identified key operational needs, barriers to adoption, and opportunities for alignment across jurisdictions. These findings lay the groundwork for the development of a scalable, electronic and trip-level dealer reporting system that reflects the realities of Bay-wide seafood commerce.

Alignment with project goals

The project met its Phase 1 objectives: (1) identifying management priorities, (2) capturing industry perspectives, and (3) documenting both shared and agency-specific reporting requirements. Managers emphasized the need for timely, trip-level data to verify harvester reports, support quota tracking, and ensure resource sustainability. In Maryland, striped bass already benefits from a strong reporting infrastructure, with harvest verified through state-registered check stations. Aligning dealer data with these existing verification processes presents an opportunity to improve accuracy without duplicating effort. Dealers—especially those already using systems such as Maryland's FACTS™ or Virginia's Gateway—voiced support for digital tools that reduce manual paperwork and improve access to their records. In Maryland, participants expressed interest in expanding the voluntary shellfish dealer module within FACTS™, highlighting features like automated receipts, purchase summaries, and tax exports as helpful starting points. One dealer also suggested integrating GIS-based mapping features to help buyers show where oysters are harvested, supporting traceability. Support was strongest among those dealing with complex or overlapping paper-based workflows.

Shared themes and challenges

Stakeholders broadly aligned on several themes: the need to streamline duplicative reporting, the value of mobile-accessible systems with offline functionality, and the importance of customizable tools that match diverse business operations. However,

differences emerged around system readiness and concerns about regulatory impact. Some dealers—particularly smaller or rural operators—cited limited technical capacity and apprehension about increased oversight. Managers emphasized that the goal of modernization is to improve accuracy and efficiency, not to increase enforcement. Regional differences in workflows and infrastructure (e.g., Maryland's FACTS™ vs. PRFC's pending electronic harvest system) underscore the need for systems that are flexible yet compatible.

Low stakeholder engagement was identified a potential risk at the outset of this project. To address this, ORP implemented an extensive outreach strategy using personalized emails, phone calls, and coordination with agency partners. Over 100 seafood dealers were contacted, and industry feedback was collected through surveys, one-on-one conversations, and group sessions. Participation varied across jurisdictions, with high response rates from Maryland and the Potomac region, but lower engagement from Virginia. These efforts highlight the importance of leveraging local contacts, timing outreach during off-seasons, and offering multiple avenues for participation (e.g., in-person and hybrid sessions, holding meetings in central or high-traffic areas, or coordinating events during slower times in the fishing season). Lessons from this phase can help inform more targeted communication strategies in future phases of system development.

Final recommendations and next steps

Although all jurisdictions report data that aligns with ACCSP standards, the methods for collecting that data differ across agencies. Some use paper, others use electronic systems, and many use a combination of both. This project highlighted a shared interest in streamlining workflows, reducing burden on both agency staff and dealers, and improving consistency in how data is submitted.

Phase 2 would benefit from focusing on:

- Pilot testing across business types and jurisdictions to identify real-world barriers, refine workflows, and evaluate functionality in both small and high-volume dealer settings.
- Ensure compatibility with current tools and agency systems, including Maryland's FACTS™, PRFC's pending electronic harvest platform, and commercial options like Blue Trace or eDealer, to support integration rather than replacement.
- Standardize critical data entry fields (e.g., license numbers, species codes, harvest areas) to reduce duplicative reporting for dealers who report to MDNR, PRFC, and VMRC.
- Expand and promote existing tools, such as the FACTS™ shellfish dealer module, by building out requested features. Expansion should also include additional seafood (e.g., crabs, finfish) to ensure broader applicability.

- Incorporate optional, customizable tools that reflect operational needs, such as inventory management, integrated HACCP compliance logs, and auto-generated monthly or tax summaries.
- Design for accessibility and flexibility, including mobile optimization, offline data entry, and streamlined features like QR code scanning and dropdown menus to support users with limited technical resources.
- Support implementation and onboarding through one-on-one training, live demos at industry events, dedicated help desk services, and partnerships with trade organizations representing commercial watermen and seafood businesses.
- Use local contacts and trusted networks to improve engagement and schedule outreach during the off-season to maximize availability and participation.
- Clearly communicate that the goal is better data, not enforcement, and show how improved reporting supports industry benefits such as more accurate quotas, improved pricing, and reduced duplication.

These recommendations support the broader goal of developing a user-informed, adaptable electronic and trip-level dealer reporting system that improves accountability, reduces reporting mismatches, and enhances data sharing across Maryland, Virginia, and the Potomac region.

Supplementary materials

Attachment A. Seafood dealer literature review

Summary of seafood reporting systems and practices

To support planning for improved electronic and trip-level dealer reporting in the Chesapeake Bay, ORP conducted a review of electronic seafood reporting systems used in other regions, primarily within the United States. The review covered both state-managed programs and third-party platforms to identify technical features, adoption challenges, and system design approaches that could inform future development in Maryland, Virginia, and the Potomac region. Information specific to reporting systems in these three jurisdictions is included in the final Fisheries Information System dealer report, not in this summary. While the focus was on dealer reporting, some harvester reporting systems are also referenced where relevant. In many cases, dealers also act as harvesters, and lessons from harvester-focused tools helped inform broader design considerations for streamlined, trip-level reporting.

This review was conducted early in the project to help guide information gathering with managers and industry. It relied on publicly available documentation and, where possible, conversations with agency staff. References are cited at the end of this document. While not a comprehensive audit of all reporting systems, the review highlights key themes and examples that helped shape the project's design priorities.

State-reporting platforms

Alaska: Alaska's eLandings system collects trip-level reporting from dealers, processors, and tenders via web-based and offline tools. The platform tracks catch details, gear, processing steps, and economic data. It's used across both state and federal fisheries and integrates with observer programs and VMS data. Offline components (tLandings and seaLandings) support use in remote locations. While widely adopted, the interface is somewhat dated, and it lacks a smartphone version, which some users have identified as a limitation.

California: California's E-Tix system is used by licensed dealers and processors to submit electronic fish tickets within three days of landing. The system captures trip-level catch, gear, dealer and vessel IDs, and price. Harvesters still report separately through paper logbooks. The system is tied to the Pacific Fisheries Information Network to ensure consistency with neighboring states. State enforcement staff conduct dockside checks and audits. While comprehensive, smaller or rural dealers sometimes face a steeper learning curve.

Georgia: Georgia collects trip-level seafood dealer reports mostly through monthly paper forms, though SAFIS-based electronic reporting is an option with prior approval. Paper tickets record harvest dates, species, gear, and pricing. In some fisheries—like shrimp and blue crab—harvesters may also serve as their own dealers. Georgia Department of Natural Resources staff support compliance by distributing ticket packets and maintaining communication with license holders. While Excel upload templates and digital options are technically available, the state has not moved fully to electronic reporting to keep the process manageable for small operators.

Louisiana: Louisiana's Trip Ticket Program requires dealers to report catch transfers either on paper or electronically. Electronic submission supports tracking, quota monitoring, and integration with state and federal systems. Reports include species, gear, license numbers, and transaction data. The electronic platform also offers business tools, like tracking payments and generating checks. The Department of Wildlife and Fisheries oversees compliance and provides technical support to participating dealers.

Massachusetts: Massachusetts uses SAFIS eDealer for weekly dealer reporting and eTrips for monthly harvester reports. The state mandates electronic submission and tracks a wide range of seafood species, including finfish, shellfish, and crustaceans. Reports include catch volume, gear type, and harvest location. The Division of Marine Fisheries provides training and support to ensure smooth adoption. Mandatory dealer electronic reporting went into effect between 2019 and 2020, improving data consistency and aligning with broader regional systems.

New York: New York requires seafood dealers to report landings weekly—or daily for some quota-managed species—using SAFIS's eDealer platform. Reports include details like species, quantity, price, and landing location. Harvesters report through eTrips, either monthly or trip-level depending on the fishery. Reporting is enforced by the Department of Environmental Conservation, which monitors submissions and conducts audits. Electronic dealer reporting became mandatory in 2012, and the system continues to evolve in line with regional standards.

North Carolina: North Carolina's Trip Ticket Program requires seafood dealers to submit trip-level reports for every commercial transaction. High-volume dealers must report electronically, while most continue using multi-part paper tickets. The system collects details like species, gear, harvest area, and pricing. Marine patrol conducts audits, and port agents help dealers with compliance. North Carolina offers its own free software and is currently developing a web-based platform (VESL) to simplify reporting. The state plans to make dealer-based trip-level reporting mandatory for all harvests starting in late 2025. Dealers have expressed interest in maintaining features like built-in accounting tools in the updated system.

Oregon: Oregon uses a web-based e-Ticket system for dealers to report trip-level landings within one day electronically or within five days on paper. Reports include gear, vessel ID, species, price, and volume. The system is connected with federal databases and supports timely stock assessments. The Oregon Department of Fish and Wildlife offers training and phone assistance, though some users in remote areas report difficulty with internet access.

Washington: Washington requires seafood dealers and processors to submit fish receiving tickets, many of which are still submitted on paper. Reports include species, gear, vessel, and harvester details. Data is fed into the state's Catch Accounting System, which also uses harvester logbooks and observer programs for cross-checking. Transition to electronic reporting is ongoing, but manual entry remains common, and there is no centralized portal yet for harvester-side submissions. Compliance is managed by field staff and inspectors.

Third-party reporting platforms

BlueTrace: BlueTrace (formerly OysterTracker) is used by shellfish dealers and growers in more than two dozen U.S. states. It allows users to enter data, print tags, manage inventory, and track buyers from a phone or computer. The platform can sync with tools like QuickBooks and helps users stay compliant with FSMA Rule 204. Dealers have found it easy to use and appreciate the customer support, though some say the subscription fee may be a challenge for smaller businesses.

eCatch: eCatch is a mobile app created by The Nature Conservancy, originally for commercial groundfish fishermen in California. It allows users to report trip-level data in real time, including catch details, gear type, and fishing location using GPS. The app also includes features for voluntary data sharing and heatmaps to identify areas of high bycatch or target species. While it's easy to use and designed to support collaboration, it's only available on iOS, which could limit adoption outside its original user group.

Legit Fish: Legit Fish is a cloud-based traceability platform used mainly along the Atlantic Coast, particularly in Massachusetts. It connects harvester data with dealers and processors and verifies landings using government records. The system tracks species, gear type, amounts, and buyer info. While it isn't app-based, it helps with compliance and adds consumer transparency through QR codes on packaging. It's known for strong traceability, but its use is still fairly limited outside the region, and setup can take some time.

Oceanfarmr: Oceanfarmr (formerly SmartOysters) is a mobile and web app used by shellfish and seaweed farmers to manage day-to-day operations. It's popular in places like the U.S., Australia, and New Zealand and helps growers track gear, stock movements, harvests, and sales. The platform also offers planning tools and visual dashboards for reporting. While it's not required for regulatory reporting, it supports traceability and streamlines farm logistics. Users have noted that the subscription cost and learning curve for some features can be barriers.

TraceRegister: TraceRegister is a web-based platform used by companies across the seafood supply chain to track where seafood comes from and how it's handled. It allows fishers, processors, importers, and others to upload information like species, harvest method, shipping details, and processing steps. Although it's not required, many businesses use it to meet rules under programs like the Seafood Import Monitoring Program (SIMP) and the Food Safety Modernization Act (FSMA) Rule 204. The platform is widely adopted and works with many business systems, but it can be expensive and depends heavily on users to enter accurate information.

VESL by Bluefin Data: VESL is a mobile and web-based reporting tool used by harvesters and dealers in Maine, the Southeast, and the Greater Atlantic Region. It supports trip-level reporting and connects with state and federal systems. Features include offline use, API integrations for multiple agencies, and real-time submissions. While many find it easy to use, especially where it's required, some users have noted occasional glitches, and it can take time to get familiar with the setup.

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Attachment B. Manager surveys

Manager pre-meeting survey: Seafood dealer reporting

The seafood dealer project focuses on identifying the requirements, challenges, and needs for implementing trip-level dealer reporting in the Chesapeake Bay region. These manager sessions will gather insights into current reporting processes, management needs, and technical requirements.

Please complete the survey by October 10, as it will help us understand your perspectives for the upcoming meeting. Survey responses and insights from these sessions will be included in future presentations, sessions, or the final report to the funding agency. If you'd prefer any part of your response to remain anonymous, please indicate this in the comments section at the end of the survey.

If you have any questions, please contact Kinsey Tedford at ktedford@oysterrecovery.org.

* Indicates required question

Background and role

What is your name and primary role within your organization? *

Your answer

How long have you been involved in dealer data reporting or management?

- ○ Less than 1 year
- ○ 1-3 years
- ○ 3-5 years
- ○ More than 5 years
- ○ Other:

Current reporting processes and data management

Is there a dealer reporting process currently in place?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

If yes, please describe the current dealer reporting process.

Your answer

Do the reporting processes differ for each fishery?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

What successes can be highlighted in the current dealer reporting system?

Your answer

Which management decisions rely on dealer report data? *(Select all that apply.)*

- ☐ Quota management
- ☐ Stock assessment
- ☐ Regulatory compliance
- ☐ Public health monitoring
- ☐ Enforcement actions
- ☐ Other:

Challenges, concerns, and infrastructure constraints

What are your primary challenges and concerns regarding trip-level electronic dealer reporting? *(Select all that apply.)*

- [ ] Data accuracy
- [ ] Compliance by dealers
- [ ] Increased administrative burden
- [ ] Integration with existing systems
- [ ] Hesitancy to transition from paper to electronic reporting
- [ ] Other:

What technical or infrastructure constraints might impact the implementation of trip-level electronic reporting? *(Select all that apply.)*

- [ ] Limited or unreliabile internet access
- [ ] Outdated or incompatible hardware
- [ ] Lack of technical support
- [ ] Data security and confidentiality
- [ ] User adoption and training
- [ ] Scalability challenges (data storage, processing power, etc.)
- [ ] Legal and regulatory compliance
- [ ] Other:

Use of dealer data and opportunities for improvement

How do you use dealer data in your role?

Your answer

How critical is dealer data to your role?

	1	2	3	4	5	
Not important	○	○	○	○	○	Extremely important

Are there any gaps in data utilization that you think trip-level electronic reporting could help address?

Your answer

What potential flexibilities or business tools would encourage industry adoption of trip-level electronic reporting? *(Select all that apply.)*

- [ ] Phased implementation
- [ ] Offline reporting capabilities
- [ ] Customizable reporting options (reporting frequency, customized measurement units)
- [ ] Data ownership and access (users can easily access their data for business analysis and marketing)
- [ ] Simplified audits
- [ ] Expense tracking tools (costs related to operations, such as fuel, bait, ice, etc.)
- [ ] Integration with accounting software (QuickBooks, Xero, etc.)
- [ ] Other:

Training and support

What kind of training or support do you believe dealers need to effectively use a trip-level electronic reporting system?

Your answer

If a transition from paper to electronic reporting were to happen, what impact do you anticipate on your staff's workload, and what support would be helpful?

Your answer

Additional comments

Please provide any additional comments, insights, or specific topics/issues you want to ensure are discussed during the upcoming meeting.

Your answer

Thank you for filling out the survey!

Submit Clear form

Manager pre-meeting survey: Seafood dealer reporting

The seafood dealer project focuses on identifying the requirements, challenges, and needs for implementing trip-level dealer reporting in the Chesapeake Bay region. These manager sessions will gather insights into current reporting processes, management needs, and technical requirements.

Please complete the survey by October 31st, as it will help us understand your perspectives for the upcoming meeting. Survey responses and insights from these sessions will be included in future presentations, sessions, or the final report to the funding agency. If you'd prefer any part of your response to remain anonymous, please indicate this in the comments section at the end of the survey.

If you have any questions, please contact Kinsey Tedford at ktedford@oysterrecovery.org.

* Indicates required question

Background and role

What is your name and primary role within your organization? *

Your answer

How long have you been involved in dealer data reporting or management?

- ○ Less than 1 year
- ○ 1-3 years
- ○ 3-5 years
- ○ More than 5 years
- ○ Other:

Current reporting processes and data management

In this section, the first six questions relate to seafood dealers, while the last three are for harvesters.

Is there a dealer reporting process currently in place?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

If yes, please describe the current dealer reporting process.

Your answer

If there is no reporting process, please describe any records or other methods the dealer uses to demonstrate they are an active licensed dealer.

Your answer

Do the dealer reporting processes (or other methods described above) differ for each fishery?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

What successes can be highlighted in the current dealer reporting process or system, if any?

Your answer

Which management decisions rely on dealer report data? *(Select all that apply.)*

- ☐ Quota management
- ☐ Stock assessment
- ☐ Regulatory compliance
- ☐ Public health monitoring
- ☐ Enforcement actions
- ☐ Other:

Is there a harvester reporting process currently in place?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

If yes, please describe the current harvest reporting process.

Your answer

If there is no reporting process, please describe any records or other methods the harvester uses to demonstrate they are an active licensed harvester.

Your answer

Challenges, concerns, and infrastructure constraints

What are your primary challenges and concerns regarding trip-level electronic dealer reporting? *(Select all that apply.)*

- [ ] Data accuracy
- [ ] Compliance by dealers
- [ ] Increased administrative burden
- [ ] Integration with existing systems
- [ ] Hesitancy to transition from paper to electronic reporting
- [ ] Other:

What technical or infrastructure constraints might impact the implementation of trip-level electronic reporting? *(Select all that apply.)*

- [ ] Limited or unreliabile internet access
- [ ] Outdated or incompatible hardware
- [ ] Lack of technical support
- [ ] Data security and confidentiality
- [ ] User adoption and training
- [ ] Scalability challenges (data storage, processing power, etc.)
- [ ] Legal and regulatory compliance
- [ ] Other:

Use of dealer data and opportunities for improvement

How do you use dealer data in your role, or how would you use it if you had access to it?

Your answer

How critical is dealer data to your role?

	1	2	3	4	5	
Not important	○	○	○	○	○	Extremely important

Are there any gaps in data utilization that you think trip-level electronic reporting could help address?

Your answer

What potential flexibilities or business tools would encourage industry adoption of trip-level electronic reporting? *(Select all that apply.)*

- [ ] Phased implementation
- [ ] Offline reporting capabilities
- [ ] Customizable reporting options (reporting frequency, customized measurement units)
- [ ] Data ownership and access (users can easily access their data for business analysis and marketing)
- [ ] Simplified audits
- [ ] Expense tracking tools (costs related to operations, such as fuel, bait, ice, etc.)
- [ ] Integration with accounting software (QuickBooks, Xero, etc.)
- [ ] Other:

Training and support

What kind of training or support do you believe dealers need to effectively use a trip-level electronic reporting system?

Your answer

If a transition from paper to electronic reporting were to happen, what impact do you anticipate on your staff's workload, and what support would be helpful?

Your answer

Additional comments

Please provide any additional comments, insights, or specific topics/issues you want to ensure are discussed during the upcoming meeting on November 4th.

Your answer

Thank you for filling out the survey!

Submit

Clear form

Manager pre-meeting survey: Seafood dealer reporting

The seafood dealer project focuses on identifying the requirements, challenges, and needs for implementing trip-level dealer reporting in the Chesapeake Bay region. These manager sessions will gather insights into current reporting processes, management needs, and technical requirements.

Please complete the survey by November 12th, as it will help us understand your perspectives for the upcoming meeting. Survey responses and insights from these sessions will be included in future presentations, sessions, or the final report to the funding agency. If you'd prefer any part of your response to remain anonymous, please indicate this in the comments section at the end of the survey.

If you have any questions, please contact Kinsey Tedford at ktedford@oysterrecovery.org.

* Indicates required question

Background and role

What is your name and primary role within your organization? *

Your answer

How long have you been involved in dealer data reporting or management?

- ○ Less than 1 year
- ○ 1-3 years
- ○ 3-5 years
- ○ More than 5 years
- ○ Other:

Current reporting processes and data management

Is there a dealer reporting process currently in place?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

If yes, please describe the current dealer reporting process.

Your answer

If there is no reporting process, please describe any records or other methods the dealer uses to demonstrate they are an active licensed dealer.

Your answer

Do the reporting processes differ for each fishery?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

What successes can be highlighted in the current dealer reporting process or system, if any?

Your answer

Which management decisions rely on dealer report data? *(Select all that apply.)*

- ☐ Quota management
- ☐ Stock assessment
- ☐ Regulatory compliance
- ☐ Public health monitoring
- ☐ Enforcement actions
- ☐ Other:

Challenges, concerns, and infrastructure constraints

What are your primary challenges and concerns regarding trip-level electronic dealer reporting? *(Select all that apply.)*

- [ ] Data accuracy
- [ ] Compliance by dealers
- [ ] Increased administrative burden
- [ ] Integration with existing systems
- [ ] Hesitancy to transition from paper to electronic reporting
- [ ] Other:

What technical or infrastructure constraints might impact the implementation of trip-level electronic reporting? *(Select all that apply.)*

- [ ] Limited or unreliabile internet access
- [ ] Outdated or incompatible hardware
- [ ] Lack of technical support
- [ ] Data security and confidentiality
- [ ] User adoption and training
- [ ] Scalability challenges (data storage, processing power, etc.)
- [ ] Legal and regulatory compliance
- [ ] Other:

Use of dealer data and opportunities for improvement

How do you use dealer data in your role?

Your answer

How critical is dealer data to your role?

	1	2	3	4	5	
Not important	○	○	○	○	○	Extremely important

Are there any gaps in data utilization that you think trip-level electronic reporting could help address?

Your answer

What potential flexibilities or business tools would encourage industry adoption of trip-level electronic reporting? *(Select all that apply.)*

- [ ] Phased implementation
- [ ] Offline reporting capabilities
- [ ] Customizable reporting options (reporting frequency, customized measurement units)
- [ ] Data ownership and access (users can easily access their data for business analysis and marketing)
- [ ] Simplified audits
- [ ] Expense tracking tools (costs related to operations, such as fuel, bait, ice, etc.)
- [ ] Integration with accounting software (QuickBooks, Xero, etc.)
- [ ] Other:

Training and support

What kind of training or support do you believe dealers need to effectively use a trip-level electronic reporting system?

Your answer

If a transition from paper to electronic reporting were to happen, what impact do you anticipate on your staff's workload, and what support would be helpful?

Your answer

Additional comments

Please provide any additional comments, insights, or specific topics/issues you want to ensure are discussed during the upcoming meeting on November 15th.

Your answer

Thank you for filling out the survey!

Submit Clear form

Attachment C. Industry surveys

Industry outreach survey on dealer reporting practices

The seafood dealer project focuses on identifying the requirements, challenges, and needs for improving dealer reporting processes in the Chesapeake Bay region. The Oyster Recovery Partnership is gathering information on behalf of Maryland Department of Natural Resources to better understand current reporting practices, challenges, and opportunities for enhancements within the seafood industry.

Survey responses and insights from this effort may be included in presentations, discussions, or technical reports. If you'd prefer any part of your responses to remain anonymous, please indicate this in the comments section at the end of the survey.

For any questions, please contact Kinsey Tedford at ktedford@oysterrecovery.org or 410-990-4970 ext. 1031.

* Indicates required question

Business information

We'd like to learn about your business and how it operates. This helps ensure any dealer reporting improvements work for businesses like yours.

What is your full name? *

Your answer

What is your business name if it is different from your full name?

Your answer

Your answer

What is your email?

Your answer

What type of business do you run? *(Select all that apply.)*

- [ ] Retail
- [ ] Wholesale
- [ ] Processing
- [ ] Other:

Does your business use mobile devices (phone/tablet) or a desktop computer for business purposes?

- ( ) Yes
- ( ) No
- ( ) Other:

purposes, what do you use them for? (Select all that apply.)

- [ ] Business transactions (invoicing, payment processing)
- [ ] Business website management
- [ ] Social media marketing
- [ ] Retail sales
- [ ] Inventory tracking or management
- [ ] Other:

Products and partnerships

We're interested in the types of products you handle and your partnerships. This helps us see how dealer reporting connects different parts of the seafood industry.

What products do you buy from Maryland watermen for your business? *(Select all that apply.)*

- [ ] Finfish
- [ ] Crabs
- [ ] Oysters
- [ ] Clams
- [ ] Bait
- [ ] Other:

- 1-10
- 11-20
- More than 20 harvesters
- Other:

How many harvesters do you typically buy from daily?

- 1-2
- 3-5
- More than 5 harvesters
- Other:

Dealer reporting practices

We want to understand how you currently report your dealer data. Your responses will highlight what's working and where improvements might help.

Resources? (Select all that apply.)

- [ ] Buyer monthly report
- [ ] Shellfish buy tickets
- [ ] I use the SAFIS electronic system.
- [ ] I don't submit dealer reports.
- [ ] I don't have a dealer's license.
- [ ] Other:

Do you report harvest or dealer activity to other entities besides Maryland (i.e. other states, Potomac River Fisheries Commission, or NOAA-NMFS)

- ( ) Yes
- ( ) No
- ( ) Other:

How do you currently track sales as a seafood dealer? *(Select all that apply and briefly describe your process.)*

- [ ] I issue receipts to harvesters.
- [ ] I maintain digital records on the computer (e.g., spreadsheets, accounting software).
- [ ] I maintain paper records (e.g., logbooks, invoices, receipts).
- [ ] I use a specific tracking system or app (please specify).
- [ ] Other:

identify opportunities to make these processes simpler.

How do you maintain records to comply with Department of Health requirements for seafood safety? *(Select all that apply and briefly explain your process where needed.)*

- [ ] I maintain a HACCP (Hazard Analysis Critical Control Point) plan.
- [ ] I track and record product temperature and holding times (e.g., time/temperature at arrival, storage logs).
- [ ] I document product freshness (e.g., receiving logs).
- [ ] I maintain sanitation logs for facilities and equipment.
- [ ] I keep records of product traceability (e.g., where and when seafood was harvested, sourced, or sold).
- [ ] I record health inspections and compliance reports.
- [ ] I maintain paper-based records.
- [ ] I use digital systems or software for maintaining this information.
- [ ] Other:

Opinions on reporting improvements

We're looking for your input on improving dealer reporting. Your feedback helps ensure any changes reflect the needs of the industry.

reporting would be for you and your business?

	1	2	3	4	5	
Low	○	○	○	○	○	High/definitely

Based on your rating, why do you think using an electronic system would (or would not) be beneficial?

Your answer

Would consolidation of Department of Natural Resources and Department of Health dealer reporting and/or record keeping into one system be helpful?

- ○ Yes
- ○ No
- ○ Maybe
- ○ Other:

Department of Natural Resources? *(Select all that apply.)*

- [ ] Provides an opportunity to verify reported harvest data against sales records.
- [ ] Encourages fairness by ensuring consistent rules for everyone.
- [ ] Encourages a sustainable fishery.
- [ ] Avoids mislabelling of seafood as Maryland seafood.
- [ ] Simplifies compliance with state regulations.
- [ ] Enhances transparency and traceability in the seafood supply chain.
- [ ] None of the above; I don't think there are any benefits.
- [ ] Other:

Challenges and solutions

We know reporting can come with challenges. These questions focus on understanding what's difficult and exploring tools or features that could make reporting easier.

Do you think there are challenging aspects to the current dealer reporting process?

- ○ Yes
- ○ No

If yes, what aspects of the current dealer reporting process are challenging?

Your answer

(Select all that apply).

- [ ] Change is hard.
- [ ] Training is required to use the system.
- [ ] Requires frequent data entry for trip-level, increasing workload.
- [ ] Compatibility with current workflows is difficult.
- [ ] Could lead to more regulations.
- [ ] Other:

What are the challenges with implementing an **electronic** dealer reporting system? *(Select all that apply).*

- [ ] Change is hard.
- [ ] Training is required to use the system.
- [ ] Dependence on stable internet or technology infrastructure.
- [ ] Compatibility with current workflows is difficult.
- [ ] Could lead to more regulations.
- [ ] Other:

- [ ] Ability to print summaries for record-keeping.
- [ ] Offline reporting capabilities (enter data without internet access).
- [ ] Phased implementation (gradual transition to trip-level or electronic reporting).
- [ ] Customizable reporting options (e.g., frequency, units of measurement).
- [ ] Integration with existing accounting software (e.g., QuickBooks, Xero).
- [ ] Simplified data entry tools (e.g., pre-filled fields, templates).
- [ ] Ability to export and access reports for personal records.
- [ ] Other:

Adopting and testing a new reporting system

We're gathering input to understand what training, support, or tools would make it easier to test and use a new dealer reporting system, if needed.

If a new or enhanced dealer reporting system was introduced, what kind of training or support would you need to feel comfortable using it?

Your answer

- Yes
- No
- Unsure
- Other:

If you got to choose, which reporting method for dealer reporting would you prefer to test out? *(Select all that apply.)*

- [ ] Trip-level reporting: This means recording information for each fishing trip or purchase, similar to the buy ticket process for shellfish. This differs from the current system for other seafood, which compiles data from multiple trips for a species over the month.
- [ ] Electronic reporting: This replaces paper forms and lets you enter data on your phone, tablet, or computer. It guides you with prompts and allows you to submit your report to DNR when you're ready, as long as you meet the deadline.
- [ ] Integrated trip-level and electronic reporting: A system that combines trip-level and electronic reporting. It lets you manage and submit trip data digitally, replacing the monthly buyer paper report.
- [ ] Other:

Please provide any additional comments, insights, or topics you feel were not covered in this survey. If you would like any part of your response to remain anonymous, please indicate this in your comments.

Your answer

Industry outreach survey on buyer reporting and record maintenance practices

The seafood buyer (or dealer) project focuses on identifying the requirements, challenges, and needs for improving buyer reporting and record maintenance processes in the Chesapeake Bay region. The Oyster Recovery Partnership is gathering information on behalf of the Maryland Department of Natural Resources, Potomac River Fisheries Commission, and Virginia Marine Resources Commission to better understand current practices, challenges, and opportunities for enhancements within the seafood industry.

Survey responses and insights from this effort may be included in presentations, discussions, or technical reports. **If you'd prefer any part of your responses to remain anonymous, please indicate this in the comments section at the end of the survey.**

For any questions, please contact Kinsey Tedford at ktedford@oysterrecovery.org or 410-990-4970 ext. 1031.

* Indicates required question

Business information

We'd like to learn about your business and how it operates. This will help ensure that any improvements to buyer reporting or record maintenance processes are tailored to businesses like yours.

What is your full name? *

Your answer

Your answer

What is your phone number? *

Your answer

What is your email?

Your answer

What type of business do you run? *(Select all that apply.)*

- [ ] Retail
- [ ] Wholesale
- [ ] Processing
- [ ] Other:

Does your business use mobile devices (phone/tablet) or a desktop computer for business purposes?

- ( ) Yes
- ( ) No
- ( ) Other:

purposes, what do you use them for? (Select all that apply.)

- [ ] Business transactions (invoicing, payment processing)
- [ ] Business website management
- [ ] Social media marketing
- [ ] Retail sales
- [ ] Inventory tracking or management
- [ ] Other:

Products and partnerships

We're interested in the types of seafood products you handle and your partnerships. This helps us understand how buyer reporting and record maintenance link different parts of the seafood industry.

What products do you buy from Maryland watermen for your business? *(Select all that apply.)*

- [ ] Finfish
- [ ] Crabs
- [ ] Oysters
- [ ] Clams
- [ ] Bait
- [ ] Other:

- [ ] Finfish
- [ ] Crabs
- [ ] Oysters
- [ ] Clams
- [ ] Bait
- [ ] Other:

What products do you buy from watermen harvesting in the Potomac River for your business? *(Select all that apply.)*

- [ ] Finfish
- [ ] Crabs
- [ ] Oysters
- [ ] Clams
- [ ] Bait
- [ ] Other:

How many harvesters sell products to you regularly?

- ○ 1-10
- ○ 11-20
- ○ More than 20 harvesters
- ○ Other:

- 1-2
- 3-5
- More than 5 harvesters
- Other:

Buyer and harvest data practices

We want to understand how you currently handle buyer and harvest data, whether through reporting or maintaining records. Your responses will help identify what's working and where improvements might be needed.

What type of dealer reporting do you submit to the Maryland Department of Natural Resources? *(Select all that apply.)*

- [ ] Buyer monthly report
- [ ] Shellfish buy tickets
- [ ] I use the SAFIS electronic system.
- [ ] I don't submit dealer reports.
- [ ] I don't have a Maryland dealer's license.
- [ ] Other:

- [ ] Monthly buyer report for quota-managed species
- [ ] Shellfish buy tickets
- [ ] I use the SAFIS electronic system.
- [ ] I use the Bluefin electronic system.
- [ ] I don't submit buyer reports, but maintain records for VMRC (e.g., for audits).
- [ ] I don't submit reports or maintain records for VMRC.
- [ ] I don't have a Virginia buyer's license.
- [ ] Other:

What type(s) of buyer reports or records are you required to maintain for the Potomac River Fisheries Commission? *(Select all that apply.)*

- [ ] Weekly harvest reports (trip-level details)
- [ ] Shellfish buy tickets
- [ ] Weekly reconciliation reports (oyster sales, purchases, taxes)
- [ ] I don't submit reports, but maintain records for PRFC (e.g., for audits).
- [ ] I don't submit reports or maintain records for PRFC.
- [ ] I don't have a PRFC buyer's license.
- [ ] Other:

If you maintain records, what types of information do you track?

Your answer

briefly describe your process.)

- [ ] I issue receipts to harvesters.
- [ ] I maintain digital records on the computer (e.g., spreadsheets, accounting software).
- [ ] I maintain paper records (e.g., logbooks, invoices, receipts).
- [ ] I use a specific tracking system or app (please specify).
- [ ] Other:

Are you also a harvester?

- ○ Yes
- ○ No
- ○ Other:

If yes, what are your thoughts on the current harvest reporting process?

Your answer

Do you report harvest or buyer activity to other entities besides MDNR, VMRC, or PRFC (i.e. other states or NOAA-NMFS)

- ○ Yes
- ○ No
- ○ Other:

- Yes
- No
- Other:

If yes, what aspects of the auditing process were most challenging?

Your answer

Compliance and food safety practices

We'd like to understand how you meet food safety and traceability requirements. This helps identify opportunities to make these processes simpler.

- [ ] I maintain a HACCP (Hazard Analysis Critical Control Point) plan.
- [ ] I track and record product temperature and holding times (e.g., time/temperature at arrival, storage logs).
- [ ] I document product freshness (e.g., receiving logs).
- [ ] I maintain sanitation logs for facilities and equipment.
- [ ] I keep records of product traceability (e.g., where and when seafood was harvested, sourced, or sold).
- [ ] I record health inspections and compliance reports.
- [ ] I maintain paper-based records.
- [ ] I use digital systems or software for maintaining this information.
- [ ] Other:

Opinions on reporting and record maintenance improvements

We're looking for your input on improving buyer reporting and record maintenance. Your feedback will help ensure any changes address the needs of the industry.

On a scale of 1-5, how beneficial do you think using an electronic system for buyer reporting would be for you and your business?

	1	2	3	4	5	
Low	○	○	○	○	○	High/definitely

Your answer

If you report in Maryland, would consolidation of Department of Natural Resources and Department of Health dealer reporting and/or record keeping into one system be helpful?

- ○ Yes
- ○ No
- ○ Maybe
- ○ Other:

What benefits do you see for you and your business from harvesters and buyers providing trip-level (per-trip) electronic seafood data to your agency (MDNR, VMRC, and/or PRFC)? *(Select all that apply.)*

- ☐ Provides an opportunity to verify reported harvest data against sales records.
- ☐ Encourages fairness by ensuring consistent rules for everyone.
- ☐ Encourages a sustainable fishery.
- ☐ Avoids mislabelling of seafood.
- ☐ Simplifies compliance with state regulations.
- ☐ Enhances transparency and traceability in the seafood supply chain.
- ☐ None of the above; I don't think there are any benefits.
- ☐ Other:

focus on understanding what's difficult and exploring tools or features that could make these processes easier.

Do you think there are challenging aspects to the current buyer reporting or record maintenance process?

- ○ Yes
- ○ No
- ○ Other:

If yes, what aspects of the current buyer reporting or record maintenance process are challenging?

Your answer

What are the challenges with implementing a **trip-level** buyer reporting system? *(Select all that apply).*

This means recording information for each fishing trip or purchase.

- ☐ Change is hard.
- ☐ Training is required to use the system.
- ☐ Requires frequent data entry for trip-level, increasing workload.
- ☐ Compatibility with current workflows is difficult.
- ☐ Could lead to more regulations.
- ☐ Other:

(Select all that apply):

This replaces paper forms and lets you enter data on your phone, tablet, or computer. It guides you with prompts and allows you to submit your report when you're ready, as long as you meet the deadline.

- [ ] Change is hard.
- [ ] Training is required to use the system.
- [ ] Dependence on stable internet or technology infrastructure.
- [ ] Compatibility with current workflows is difficult.
- [ ] Could lead to more regulations.
- [ ] Other:

What potential flexibilities or features would make it easier to adopt a trip-level and/or electronic buyer reporting system? *(Select all that apply).*

- [ ] Ability to print summaries for record-keeping.
- [ ] Offline reporting capabilities (enter data without internet access).
- [ ] Phased implementation (gradual transition to trip-level or electronic reporting).
- [ ] Customizable reporting options (e.g., frequency, units of measurement).
- [ ] Integration with existing accounting software (e.g., QuickBooks, Xero).
- [ ] Simplified data entry tools (e.g., pre-filled fields, templates).
- [ ] Ability to export and access reports for personal records.
- [ ] Other:

test and use a new buyer reporting system, if needed.

If a new or enhanced buyer reporting system was introduced, what kind of training or support would you need to feel comfortable using it?

Your answer

Would you be willing to test out a pilot reporting system for buyer and provide feedback on how helpful it is to your business and what changes might be needed?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

to test out? (Select all that apply.)

- [ ] Trip-level reporting: This means recording information for each fishing trip or purchase, similar to the buy ticket process for shellfish. This differs from the current system in Maryland for other seafood, which compiles data from multiple trips for a species over the month.
- [ ] Electronic reporting: This replaces paper forms and lets you enter data on your phone, tablet, or computer. It guides you with prompts and allows you to submit your report when you're ready, as long as you meet the deadline.
- [ ] Integrated trip-level and electronic reporting: A system that combines trip-level and electronic reporting. It lets you manage and submit trip data digitally.
- [ ] Other:

Please provide any additional comments, insights, or topics you feel were not covered in this survey. If you would like any part of your response to remain anonymous, please indicate this in your comments.

Your answer

Thank you for filling out the survey!

Submit Clear form

Industry outreach survey on buyer reporting and record maintenance practices

The seafood buyer (or dealer) project focuses on identifying the requirements, challenges, and needs for improving buyer reporting and record maintenance processes in the Chesapeake Bay region. The Oyster Recovery Partnership is gathering information on behalf of Virginia Marine Resources Commission to better understand current practices, challenges, and opportunities for enhancements within the seafood industry.

Survey responses and insights from this effort may be included in presentations, discussions, or technical reports. If you'd prefer any part of your responses to remain anonymous, please indicate this in the comments section at the end of the survey.

For any questions, please contact Kinsey Tedford at ktedford@oysterrecovery.org or 410-990-4970 ext. 1031.

* Indicates required question

Business information

We'd like to learn about your business and how it operates. This will help ensure that any improvements to buyer reporting or record maintenance processes are tailored to businesses like yours.

What is your full name? *

Your answer

Your answer

What is your phone number? *

Your answer

What is your email?

Your answer

What type of business do you run? *(Select all that apply.)*

- [ ] Retail
- [ ] Wholesale
- [ ] Processing
- [ ] Other:

Does your business use mobile devices (phone/tablet) or a desktop computer for business purposes?

- ( ) Yes
- ( ) No
- ( ) Other:

- [ ] Business transactions (invoicing, payment processing)
- [ ] Business website management
- [ ] Social media marketing
- [ ] Retail sales
- [ ] Inventory tracking or management
- [ ] Other:

Products and partnerships

We're interested in the types of seafood products you handle and your partnerships. This helps us understand how buyer reporting and record maintenance link different parts of the seafood industry.

What products do you buy from Virginia fishermen (or harvesters) for your business? *(Select all that apply.)*

- [ ] Finfish
- [ ] Crabs
- [ ] Oysters
- [ ] Clams
- [ ] Bait
- [ ] Other:

option, excluding crabs, oysters, or clams.

- [ ] Striped bass
- [ ] Channeled whelk
- [ ] American eel
- [ ] Horseshoe crab
- [ ] Black drum
- [ ] Other:

Do you source from out-of-state (Maryland) fishermen and/or buyers?

- ( ) Yes
- ( ) No
- ( ) Other:

How many fishermen sell products to you regularly?

- ( ) 1-10
- ( ) 11-20
- ( ) More than 20 fishermen
- ( ) Other:

- 1-2
- 3-5
- More than 5 fishermen
- Other:

Buyer and harvest data practices

We want to understand how you currently handle buyer and harvest data, whether through reporting or maintaining records. Your responses will help identify what's working and where improvements might be needed.

What type(s) of buyer reports or records are you required to maintain for the Virginia Marine Resources Commission? *(Select all that apply.)*

- [ ] Monthly buyer report for quota-managed species
- [ ] Shellfish buy tickets
- [ ] I use the SAFIS electronic system.
- [ ] I use the Bluefin electronic system.
- [ ] I maintain records for VMRC (e.g., for audits).
- [ ] I don't submit reports or maintain records for VMRC.
- [ ] I don't have a buyer's license.
- [ ] Other:

Your answer

How do you currently track sales as a seafood buyer? *(Select all that apply and briefly describe your process.)*

- [ ] I issue receipts to harvesters.
- [ ] I maintain digital records on the computer (e.g., spreadsheets, accounting software).
- [ ] I maintain paper records (e.g., logbooks, invoices, receipts).
- [ ] I use a specific tracking system or app (please specify).
- [ ] Other:

Are you also a fishermen (or harvester)?

- ○ Yes
- ○ No
- ○ Other:

If yes, what are your thoughts on the current harvest reporting process to the Virginia Marine Resources Commission?

Your answer

Resources, or NOAA-NMFS)

- Yes
- No
- Other:

Have you ever undergone an audit on your buyer records?

- Yes
- No
- Other:

If yes, what aspects of the auditing process were most challenging?

Your answer

Compliance and food safety practices

We'd like to understand how you meet food safety and traceability requirements. This helps identify opportunities to make these processes simpler.

needed.)

- [ ] I maintain a HACCP (Hazard Analysis Critical Control Point) plan.
- [ ] I track and record product temperature and holding times (e.g., time/temperature at arrival, storage logs).
- [ ] I document product freshness (e.g., receiving logs).
- [ ] I maintain sanitation logs for facilities and equipment.
- [ ] I keep records of product traceability (e.g., where and when seafood was harvested, sourced, or sold).
- [ ] I record health inspections and compliance reports.
- [ ] I maintain paper-based records.
- [ ] I use digital systems or software for maintaining this information.
- [ ] I don't maintain any health records.
- [ ] Other:

Opinions on reporting and record maintenance improvements

We're looking for your input on improving buyer reporting and record maintenance. Your feedback will help ensure any changes address the needs of the industry.

On a scale of 1-5, how beneficial do you think using an electronic system for buyer reporting would be for you and your business?

	1	2	3	4	5	
Low	○	○	○	○	○	High/definitely

reporting would (or would not) be beneficial?

Your answer

What do you see as the benefits to you and your business of harvesters and buyers providing trip-level (per-trip) electronic seafood information to Virginia Marine Resources Commission? *(Select all that apply.)*

- [ ] Provides an opportunity to verify reported harvest data against sales records.
- [ ] Encourages fairness by ensuring consistent rules for everyone.
- [ ] Encourages a sustainable fishery.
- [ ] Avoids mislabelling of seafood as Virginia seafood.
- [ ] Simplifies compliance with state regulations.
- [ ] Enhances transparency and traceability in the seafood supply chain.
- [ ] None of the above; I don't think there are any benefits.
- [ ] Other:

Challenges and solutions

We know reporting and record maintenance can come with challenges. These questions focus on understanding what's difficult and exploring tools or features that could make these processes easier.

maintenance process?

- Yes
- No
- Other:

If yes, what aspects of the current buyer reporting or record maintenance process are challenging?

Your answer

What are the challenges with implementing a **trip-level** buyer reporting system? *(Select all that apply).*

This means recording information for each fishing trip or purchase.

- [ ] Change is hard.
- [ ] Training is required to use the system.
- [ ] Requires frequent data entry for trip-level, increasing workload.
- [ ] Compatibility with current workflows is difficult.
- [ ] Could lead to more regulations.
- [ ] Other:

(Select all that apply):

This replaces paper forms and lets you enter data on your phone, tablet, or computer. It guides you with prompts and allows you to submit your report when you're ready, as long as you meet the deadline.

- [ ] Change is hard.
- [ ] Training is required to use the system.
- [ ] Dependence on stable internet or technology infrastructure.
- [ ] Compatibility with current workflows is difficult.
- [ ] Could lead to more regulations.
- [ ] Other:

What potential flexibilities or features would make it easier to adopt a trip-level and/or electronic buyer reporting system? *(Select all that apply).*

- [ ] Ability to print summaries for record-keeping.
- [ ] Offline reporting capabilities (enter data without internet access).
- [ ] Phased implementation (gradual transition to trip-level or electronic reporting).
- [ ] Customizable reporting options (e.g., frequency, units of measurement).
- [ ] Integration with existing accounting software (e.g., QuickBooks, Xero).
- [ ] Simplified data entry tools (e.g., pre-filled fields, templates).
- [ ] Ability to export and access reports for personal records.
- [ ] Other:

test and use a new buyer reporting system, if needed.

If a new buyer reporting system was introduced, what kind of training or support would you need to feel comfortable using it?

Your answer

Would you be willing to test out a pilot reporting system for buyers and provide feedback on how helpful it is to your business and what changes might be needed?

- ○ Yes
- ○ No
- ○ Unsure
- ○ Other:

If you got to choose, which reporting method for buyer reporting would you prefer to test out? *(Select all that apply.)*

- ☐ Trip-level reporting: This means recording information for each fishing trip or purchase.
- ☐ Electronic reporting: This replaces paper forms and lets you enter data on your phone, tablet, or computer. It guides you with prompts and allows you to submit your report when you're ready, as long as you meet the deadline.
- ☐ Integrated trip-level and electronic reporting: A system that combines trip-level and electronic reporting. It lets you manage and submit trip data digitally.
- ☐ Other:

anonymous, please indicate this in your comments.

Your answer

Thank you for filling out the survey!

Submit Clear form

Never submit passwords through Google Forms.

Attachment D. Overview of shellfish reporting in FACTS™

Overview of Shellfish Reporting in FACTS™

FACTS™ (Fishing Activity and Catch Tracking System) is Maryland's electronic trip-level reporting platform for commercial fisheries. The system supports real-time harvest reporting by commercial shellfish harvesters and participating seafood dealers. FACTS™ is managed by the Maryland Department of Natural Resources (DNR) and is the only state-managed platform in the Chesapeake Bay region that offers integrated electronic reporting for both harvesters and dealers.

Participation in the shellfish reporting pilot is voluntary and requires a FACTS™ Shellfish Pilot Program Permit, which harvesters and dealers can request through their FACTS™ account. Once enrolled, users can submit and access harvest data via the mobile site, desktop portal, or a call center, allowing flexibility for varying levels of digital access.

Harvester Reporting Workflow

FACTS™ requires the following steps for each harvest day:

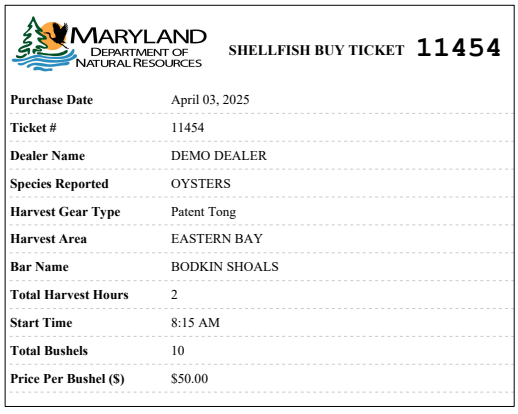
- **Trip Start Hail:** Submitted before leaving the dock; includes vessel, crew, landing time and location.
- **Trip End Hail:** Submitted before returning to the dock; includes gear type, hours fished, harvest location (NOAA code, oyster bar, or point), quantity harvested and intended dealer(s).
- **Harvest Verification:** A dockside monitor may verify the trip at the landing site. This is for data validation only—not enforcement.

Harvesters can save routine information (e.g., common landing sites, gear, NOAA areas) in their account to speed up entry. The system supports revisions, back-entering missed reports, and allows access to past trip history and harvest summaries, which can be downloaded as PDFs or spreadsheets.

Dealer Reporting and Business Tools

Dealers participating in the pilot can:

- Create **electronic buy tickets** linked to harvester End Hails.
- Enter purchases for both FACTS™ and non-FACTS™ users.
- Auto-fill tickets for participating harvesters to reduce manual entry.
- Access and download purchase summaries.
- Upload and manage shellfish tax forms directly through the system.
- Generate emailed receipts for harvester sales and retain full buy history.



MARYLAND DEPARTMENT OF NATURAL RESOURCES

SHELLFISH BUY TICKET **11454**

Purchase Date	April 03, 2025
Ticket #	11454
Dealer Name	DEMO DEALER
Species Reported	OYSTERS
Harvest Gear Type	Patent Tong
Harvest Area	EASTERN BAY
Bar Name	BODKIN SHOALS
Total Harvest Hours	2
Start Time	8:15 AM
Total Bushels	10
Price Per Bushel ($)	$50.00

Dealer login credentials act as a digital signature for reporting. Optional features include tax export tracking, inventory summary, and searchable transaction records.

FACTS™ includes business-friendly features such as drop-down menus, auto-filled fields, and mobile compatibility. It was designed to minimize duplicative entry and improve reporting accuracy. The platform supports a continuous feedback loop via a 24/7 helpline. Training videos for shellfish reporting in FACTS™ are available on the Maryland DNR E-Reporting webpage.

May 2025

Attachment E. Joint manager session summary

Regional Chesapeake Bay trip-level electronic reporting for commercial seafood dealers: Requirements gathering

Below are summaries of the manager sessions held in October and November 2024, offering insights into current harvester and dealer reporting requirements, challenges, and progress in Maryland, Virginia, and the Potomac region. Please review them carefully before the final session and email Kinsey Tedford with any corrections. The goals of this final manager session are to assess the feasibility of trip-level dealer reporting, explore opportunities for standardization, and align on actionable steps to enhance regional fisheries management.

The table below offers a high-level comparison of current reporting systems across the regions. Following the table are summaries of each session.

	Paper reporting	Electronic reporting
MDNR	• Monthly harvest reports with daily trip details. • Monthly buyer reports document multiple species in one form. • Shellfish buy tickets strictly enforced. Ticket number goes on harvest report.	• FACTS™ is a trip-level reporting system used by harvesters and shellfish dealers, submitted daily. • ~1,300 FACTS™ users enrolled (out of 5,000–6,000 license holders). • Some dealers use SAFIS.
PRFC	• Weekly harvest reports include daily trip details. • Oyster buyers submit tickets and report weekly sales, purchases, and taxes. • ~30 oyster dealers managed annually.	• eTrips pilot with 15 blue crab harvesters; implementation has stalled due to integration issues. • PRFC license database rebuild is nearing completion.
VMRC	• Monthly harvest report covers finfish. • Oyster buy tickets required. • Monthly buyer reports are specific to each quota-managed species (e.g., striped bass, horseshoe crabs). • ~143 business buyers and 57 striped bass buyer permit holders.	• Gateway system is used by ~80% of harvesters (~1,920 out of 2,400) to submit monthly trip-level data for all species except finfish. • No VA-specific dealer system exists; some dealers use SAFIS or third-party apps (e.g., *Bluefin*), but integration is inconsistent.

Maryland Department of Natural Resources (MDNR)

MDNR uses both paper and electronic systems for harvester and dealer reporting. Paper-based monthly buyer reports document the total amount and average price for species purchased, including finfish, crabs, and shellfish. Buyer reports also vary in submission rates, accuracy, and completeness, highlighting the need for standardization and stronger enforcement. Paper buy tickets for oysters and clams must be completed for each trip, recording dealer and harvester names and licenses, gear, harvest locations, bushel quantities, and price. However, issues like missing or incorrect license numbers, illegible handwriting, or errors in recorded details complicate the reconciliation process between harvesters and dealers.

FACTS™ (Fishing Activity and Catch Tracking System) is MDNR's electronic reporting platform for harvesters and shellfish dealers, currently operating at a pilot scale. It captures detailed trip-level data, including fishing effort, harvest specifics, and offload information, and is accessible via phone, tablet, or computer, as well as through a call center. Since its development in 2012, FACTS™ has expanded from blue crab reporting to include striped bass and other finfish (2014–2015), for-hire charters (2020), and shellfish (2021), with ~1,300 users (out of 5,000–6,000 commercial license holders) currently enrolled. To encourage participation and adoption during the

pilot phase, MDNR offers fishery-dependent flexibilities. Third-party verification with roving monitors has also been piloted in select fisheries to enhance accountability when funding allows. Recent legislative changes removing the requirement for physical harvest reports enable MDNR to establish regulations supporting electronic submissions, positioning FACTS™ to transition from a pilot initiative to a fully operational statewide system and formal reporting option. This expansion is especially timely as MDNR seeks to incorporate all seafood dealers into the system.

Potomac River Fisheries Commission (PRFC)

PRFC relies on weekly paper-based reports to track landings, effort data, and compliance. Harvesters submit reports due every Thursday, even if no fishing occurred, detailing species, harvest locations, and effort. Oyster buyers must be on the ISCCL, licensed in MD or VA, and hold a PRFC Registered Buyer license, submitting sale tickets and weekly reconciliation reports summarizing sales, bushels, and tax payments. PRFC validates reports through database entry and regular audits, reconciling data between harvesters and dealers. Discrepancies like overharvesting or late submissions may require corrections or, in rare cases, lead to Commission hearings. For crabs and finfish, harvesters report buyers in open-ended fields, complicating validation and compliance efforts. Despite these challenges, weekly reporting ensures accountability, transparency in the oyster fishery, and timely monitoring of compliance and tax collection.

A pilot program with 15 blue crab harvesters using eTrips demonstrated the potential for improving reporting accuracy and efficiency through an electronic system. While resource-intensive, weekly reporting supports data validation and compliance. However, adoption of electronic reporting has been slowed by PRFC's license database integration issues, funding constraints, and resistance from some commissioners and dealers unfamiliar with technology. Completing the licensing database rebuild is critical for implementing a robust electronic reporting system. Then, targeted pilots with tech-savvy or tech-willing users, along with automated reminders for incomplete reports, could enhance compliance and adoption rates of electronic reporting.

Virginia Marine Resources Commission (VMRC)

VMRC's harvester reporting system is primarily electronic, with approximately 80% of harvesters (1,920 out of 2,400 registered) submitting trip-level data through VMRC's Gateway system, mandatory since 2013. These reports, due by the 5th of the following month, include fishing effort, species landed, and harvest locations. Harvesters can enter their data throughout the month as long as they meet the deadline. The mandatory shift to electronic reporting has been the most effective way to ensure adoption, as it eliminates paper reporting and requires compliance. Consistent training and compliance mechanisms, such as automated reminders and feedback systems, have further supported this transition, streamlining reporting processes.

Dealer reporting, however, remains largely paper-based. Oyster buy tickets ensure compliance with federal sanitation requirements, and quota-specific buyer reports for species like striped bass, horseshoe crabs, and black drum enable robust quota monitoring and regulatory oversight. These manual processes maintain data consistency but are labor-intensive. Some dealers use SAFIS or third-party applications like *Bluefin*, highlighting the potential of electronic tools to complement existing systems. However, broader adoption is hindered by inconsistent integration with VMRC systems, regulatory barriers, and infrastructure limitations like unreliable internet access for smaller dealers. VMRC has identified eDealers within SAFIS as a potential option to complement or transition from paper-based dealer reporting. However, requiring dealers to adopt this system will require overcoming regulatory hurdles, addressing integration challenges, and providing targeted training and infrastructure support to ensure a smooth transition.

Manager session attendance

	Name	Position	E-mail
Maryland Department of Natural Resources	Jodi Baxter	Director of Data Management and Quota Monitoring Division	jodi.baxter@maryland.gov
	Stephanie Richards	Reporting Supervisor, Commercial Harvest Reporting Program	stephanie.richards@maryland.gov
	Meredith Jones	Reporting Specialist	meredith.jones@maryland.gov
	Sierra Hancock	Reporting Specialist	sierra.hancock@maryland.gov
	Xuezhen Tang	Database Specialist	xuezhen.tang@maryland.gov
	Jacob Holtz	Division Director, Regulatory and Legislative Review Division	jacob.holtz@maryland.gov
	Tammy O'Connell	Program Manager, Management Plans, Fish Passage, Regulations, Aquatic Permits	tamaral.oconnell@maryland.gov
	Angela Giuliano	Research Statistician	angela.giuliano@maryland.gov
	Connie Lewis	Data Quality Analyst	connie.lewis@maryland.gov
	Stanley Slide	Chief of Staff, Natural Resources Police	stanley.slide1@maryland.gov
Maryland Department of Health **attended MDNR's session*	Kim Coulbourne	Shellfish Program Coordinator, Shellfish Standardization Officer	kim.coulbourne@maryland.gov
	Amy Hontz	Shellfish Standardization Officer	amy.hontz@maryland.gov
Potomac River Fisheries Commission	Ron Owens	Executive Secretary	ron.owens@prfc.us
	Ingrid Braun-Ricks	Chief of Fisheries Science/Administrative Officer	ingrid.braun-ricks@prfc.us
	Morgan Shaffer	Data Entry Specialist	morgan.prfc@gmail.com
	Blair Parson	IT Specialist	Blair@tts-c.com
Virginia Marine Resources Commission	Shanna Madsen	Deputy Chief of the Fisheries Management Division	Shanna.Madsen@mrc.virginia.gov
	Stephanie Iverson-Cason	Commercial Data Supervisor	stephanie.iverson@mrc.virginia.gov
	Catherine Wilhelm	Fisheries Management Data Specialist	Catherine.Wilhelm@mrc.virginia.gov
	Jill Ramsey	Quota Monitoring and Permitting	Jill.Ramsey@mrc.virginia.gov
	Andrew Button	Deputy Chief Shellfish Management Division	Andrew.Button@mrc.virginia.gov
Oyster Recovery Partnership **facilitated sessions*	Ward Slacum	Executive Director	wslacum@oysterrecovery.org
	Kinsey Tedford	Fisheries Program Manager	ktedford@oysterrecovery.org
	Beth Franks	Senior Manager	bfranks@oysterrecovery.org
	Jordan Salafie	Coastal Resource Scientist	jsalafie@oysterrecovery.org