Evaluating Electronic Harvest Reporting in the Maryland Blue Crab & Striped Bass Fisheries

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Brenda Davis
Blue Crab Program Manager
Electric Edge Systems Group
Bryan Stevenson

Maryland Department of Natural Resources, Fisheries Service
Steve Early
Brenda Davis
Lynn Fegley
Carrie Kennedy

Blue Crab Industry Design Team

Oyster Recovery Partnership
Stephan Abel
Ward Slacum
Jennifer Walters

Versar, Inc.
Jodi Dew-Baxter
Ryan Corbin

Council Fire
Kate Culzoni
George Chmael

Maryland Waterman’s Association

Environmental Defense Fund
Matt Mullin
Jenn Aiosa
Why Do We Need a New Reporting System?

Why? - Management actions that required the use of harvest history initially provided an indication of problems with the current reporting system.

- Industry and the Maryland DNR identified the inability to verify harvest information as one of the main factors contributing to the lack of confidence and usability of the self-reported blue crab harvest.

“In the wake of global overfishing, negligent reporting can lead to poor policy decisions that jeopardize food security, impair resource conservation, and generate incorrect assumptions that global catch trends are plateauing or even increasing.” Abdulrazza and Pauly 2013
Why Do We Need a New Reporting System?

Is the current reporting system really all that bad?
Example Paper Forms
Traditional reporting on paper forms is a very inefficient way to get harvest information

**Errors**

- Forgotten data – being able to accurately report what was harvested at the beginning of the month
- Fields left blank
- Possible misreporting
- Instruction are unclear or confusing
  - Example – Hours on the water may include transport or gear cleaning

**Typographical, transcription**

- Manual entry - time consuming, expensive
- Data entry enters incorrect values
Ramifications of Errors

A#1 - Delay in timeliness of data

• Incorrect catch accounting
• Requires additional metrics to calculate effort
• Incorrect catch allocations
• The error is unknown
• Risk adverse management to offset uncertainty
Initial Project Goal – Blue Crabs

**GOAL**- Evaluate the feasibility of using an electronic reporting system to improve the quality of fishing activity and harvest information in the Maryland blue crab fishery.

**OBJECTIVE 1**- Determine if the blue crab industry had the capability to use an electronic harvest reporting system to report blue crab harvest **DAILY**;

**OBJECTIVE 2**- Determine if daily reporting can reduce the uncertainty and improve the quality of the reported harvest.
What were the requirements for a new reporting system?

Timely, accurate, & verifiable

Getting poor quality harvest data faster is not good enough.
Pilot Project Evaluation

1- Watermen Participation and System Use
2- Harvest Verification Techniques
3- Electronic System Performance

Metrics

– Qualitative
  • Feedback during project
  • Structured feedback meetings

– Quantitative
  • Time required to report
  • Reported data outliers
  • Harvest verification
2012
• Evaluated two hail processes

2013
• Start and end hails mandatory

2014
• Start and end hails mandatory
Results (Harvest Verification)
Dockside Monitoring

2012

Trip End Hail Group

26%

74%

Trip Start/End Hail Group

11%

89%

2013

Percent of Successful and Unsuccessful Spot Checks Overall

79.7%

20.3%

17.8%

0.9%

0.2%

1.5%

Successful Monitoring
Unsuccessful - Could not find vessel
Unsuccessful - Offload did not occur when scheduled
Unsuccessful - Unable to reach offload location
Electronic Reporting System
Number of Trips Reported for the Blue Crab Pilot Project by Month from 2012-2014

- **2012**
  - 53 watermen
  - 1,879 trips

- **2013**
  - 131 watermen
  - 4,992 trips

- **2014**
  - 142 watermen
  - 3,603 trips
Electronic System Performance

- System handled higher volumes with no incidence
- Mobile technology supported higher volumes of trips (with exceptions)
- System modifications (text messages) helped
Watermen Participation and Training
What did watermen say (2013 Feedback):

- Watermen provided valuable feedback on system performance and usability
  - Streamlining questions, look and feel of the reporting forms on the mobile website, text messages

- Electronic reporting was more convenient and probably more accurate than the monthly paper form

- Electronic reporting would enhance blue crab management

- 97% indicated they planned to continue to use the system

- 90% indicated they did not want to go back to paper reporting

- 80% agreed that trip start and trip end hailing was required to effectively monitor daily fishing activities
What’s New?
Electronic harvest reporting has been expanded to include the striped bass fishery.

- 168 trips were reported using FACTS in the 2014-2015 gill net season, & will continue for the hook and line/gill net season that just opened.

- Striped bass reporting includes a check station verification component.

- A new, multi-fishery version of electronic harvest reporting went ‘live’ June 1st.
  Watermen only need to log in once to report either striped bass or blue crabs. This version can be expanded to accept harvest reports for all fisheries.

- Plans are in place to increase participation for both fisheries.
  Blue crabs has a list of 120 additional crabbers that want to report their harvest electronically.
Conclusions

• The industry has the capability to report fishing activity and harvest using a mobile accessible electronic reporting system. Although there are still a few challenges with signal coverage.

• It’s feasible to have dockside monitoring and dealer/check station reporting programs as a component of electronic harvest reporting.

• An electronic reporting system that relies on hails and verifiable harvest reports can provide quality information needed to better manage fisheries. Including (for blue crabs) industry requests to consider in-season regulatory flexibility measures.
Questions?

Thanks!