1) **eLandings**
   Web-based reporting from shore-side processors

2) **seaLandings** and **eLogbook**
   Reporting from vessels via email

3) **tLandings**
   Reporting from tender vessels via USB drive

4) **Agency Desktop**
   Agency staff review & edit submitted data

5) **System Interface**
   Third-party software & web services interface with eLandings directly
West Coast Electronic Fish Tickets

Real time management needed for Whiting fishery May 2008

~12-15 buyers

Program Expansion
Trawl Rationalization
Program begins Jan 2011 with need for real time quota accounting. 100% of IFQ tickets must be submitted electronically

ODFW accepts all electronically submitted fish tickets

Many more buyers

Brilliant Idea

Transition to web based data submission
West Coast Fish Tickets

Electronic Tickets Database

Paper Tickets

www.pacseafood.com
West Coast Fish Tickets

Electronic Tickets Database

Non IFQ

IFQ

Paper Tickets

Non IFQ

IFQ

www.pacseafood.com
1) Washington ETIX must submit printed copy. Oregon only E-Copy
2) CDFW / PSMFC be testing state data entry ETIX
3) CDFW are paper to state and have duplicate reporting dealers. These tickets are handwritten.

www.pacseafood.com
1) Washington ETIX must submit printed copy. Oregon only E-Copy
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West Coast Fish Tickets

Proportion of 2014 Fish Tickets Submitted Electronically

- **Paper Tickets**
- **Electronic Tickets**
- **Database**

Pounds Revenue Fish Ticket Count

CA OR WA CA OR WA CA OR WA

www.pacseafood.com
West Coast Fish Tickets

Proportion of **Groundfish** Fish Tickets Submitted Electronically

<table>
<thead>
<tr>
<th></th>
<th>CA Pounds</th>
<th>OR Pounds</th>
<th>WA Pounds</th>
<th>CA Revenue</th>
<th>OR Revenue</th>
<th>WA Revenue</th>
<th>CA Fish Ticket Count</th>
<th>OR Fish Ticket Count</th>
<th>WA Fish Ticket Count</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-Tickets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Paper Tickets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
97% of regulated E-Tickets are submitted within 2 days of the delivery (2014 data)

<table>
<thead>
<tr>
<th>Days after landing</th>
<th>Cumulative proportion of total submitted</th>
<th>Count submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>45.34%</td>
<td>1226</td>
</tr>
<tr>
<td>1</td>
<td>92.79%</td>
<td>1283</td>
</tr>
<tr>
<td>2</td>
<td>97.63%</td>
<td>131</td>
</tr>
<tr>
<td>3</td>
<td>98.59%</td>
<td>26</td>
</tr>
<tr>
<td>4</td>
<td>99.04%</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>99.33%</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>99.56%</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>99.82%</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>99.85%</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>99.89%</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>99.93%</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>99.96%</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>100.00%</td>
<td>1</td>
</tr>
</tbody>
</table>

**Grand Total**: 2704
97% of regulated E-Tickets are submitted within 2 days of the delivery (2014 data).

### Cumulative proportion of total tickets submitted

<table>
<thead>
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<th>Days after landing</th>
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<th>Count submitted</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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<td>1283</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Days after landing</th>
<th>Count submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
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<tr>
<td>23</td>
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</tr>
</tbody>
</table>

**Grand Total:** 2704

- **Electronic Tickets Database**
- **Paper Tickets**
- **Non IFQ**
- **IFQ**
West Coast Fish Tickets: What’s Next?
Compliance Monitoring

Real time management needed for Whiting EFP beginning 5/08

1 full time program manager

2008

2011

Program Expansion
Trawl Rationalization Program begins 1/11 with need for shore based compliance monitoring for 100% of deliveries

+ 1 full time trainer/data debriefer
- SQL database developed
Compliance Monitoring

Electronic Tickets Database

Nightly Feed

NMFS
Vessel Account System

Catch Monitor Data

Catch Monitor Database

Compare data QA/QC

Data Entry

www.pacseafood.com
2014

<table>
<thead>
<tr>
<th>Compliance Monitors</th>
<th>76</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessels</td>
<td>100</td>
</tr>
<tr>
<td>Buyers</td>
<td>37</td>
</tr>
<tr>
<td>Ticket count*</td>
<td>2158</td>
</tr>
</tbody>
</table>

* Some offloads produce multiple tickets
Compliance Monitoring: What’s Next?
Pre-Implementation program begins
- 6 whiting vessels
- 4 fixed gear vessels
- AMR

2011

Brilliant Idea

2012

Pacific Council formally pursues EM for compliance monitoring of at-sea discards in the IFQ fishery
- 4 EFP applications approved

Began work in AK

In-house team:
- 2 video reviewers
- 1/2 Data analyst
- Saltwater EM
- Build server to store video data (3 x)

2013

EFPs go into effect (30% of fleet)
+ 2 video reviewers (4 total)
+ 1 data entry technician
- SQL databases developed
  - Logbook
  - EM data
- Full time analyst/project manager

2014

2015
Electronic Monitoring

Vessel Account System

Office of Law Enforcement
Electronic Monitoring

Paper Logbooks → Data Entry → Logbook Database → Nightly Feed →

- Vessel Account System
- Office of Law Enforcement

Electronic Tickets Database
Oregon fixed gear logbook with slight changes

<table>
<thead>
<tr>
<th>Gear ID</th>
<th>Longline Gear ID</th>
<th>Length of Skate or Line in Tub (Feet)</th>
<th>Hook Size</th>
<th>Hook Spacing (Feet)</th>
<th>Total Number of Skates or Tubs Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Longline Gear (circle one):</th>
<th>Fixed Hook - Auto Line - SNSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>String or Set #:</td>
<td></td>
</tr>
<tr>
<td>Set &amp; Up (Hours &amp; Minutes)</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Time (24 Hour Clock)</td>
<td></td>
</tr>
<tr>
<td>Depth (Feet)</td>
<td></td>
</tr>
<tr>
<td>Latitude &amp; Longitude</td>
<td></td>
</tr>
<tr>
<td># of Estimates, Tubs, or Posts per Set:</td>
<td>A or B</td>
</tr>
</tbody>
</table>

**Office of Law Enforcement**

**Vessel Account System**

**Electronic Monitoring**

Paper Logbooks → Data Entry → Logbook Database → Nightly Feed
## Electronic Monitoring

**Paper Logbooks** → **Data Entry** → **Logbook Database** → **Nightly Feed**

### Required Trawl logbook (Retained catch)

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
<th>NET TYPE</th>
<th>TARGET STRATEGY</th>
<th>Estimated pounds retained each tow</th>
<th>VESSEL</th>
<th>Trip Location ID</th>
<th>PORT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Remarks:**

*TO BE COMPLETED BY AGENCY*

Signed: ____________________________
### Electronic Monitoring

**Paper Logbooks** → Data Entry → **Logbook Database** → Nightly Feed → **Vessel Account System**

**PSMFC Supplemental EM Trawl logbook (Discarded catch)**

<table>
<thead>
<tr>
<th>DATE (m/d/y)</th>
<th>SET/TIME</th>
<th>DISCARDED (estimated weight discarded each tow)</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>PHSLD</td>
<td>CMNY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Office of Law Enforcement**
Electronic Monitoring

- **Paper Logbooks** → **Data Entry** → **Logbook Database** → **Nightly Feed** → **Vessel Account System**

- **Electronic Tickets Database**

- **Video Data** → **Storage on server x3** → **100% Video Review** → **EM Data Database** → **Office of Law Enforcement**
Electronic Monitoring

- Paper Logbooks → Data Entry → Logbook Database
- Nightly Feed
- Video Review
- Storage on server x3
- EM Data Database
- Electronic Tickets Database
- Compare data
- Vessel Account System
- Office of Law Enforcement
Electronic Monitoring

Paper Logbooks → Data Entry → Logbook Database → Nightly Feed

Nightly Feed to Vessel Account System

Nightly Feed to Office of Law Enforcement

Compare data

Electronic Tickets Database

Data Entry to Video Review

Video Data

Storage on server x3

Video Review

EM Data Database
Electronic Monitoring

- Video Data
- Storage on server x3
- 100% Video Review
- EM Data Database
- Vessel Account System
- Office of Law Enforcement
West Coast Exempted Fishing Permit (EFP)

Vessel Proportion Comparison:
Total per Fishery vs. EFP Participants per Fishery

<table>
<thead>
<tr>
<th>Fishery</th>
<th>EFP Vessel Count</th>
<th>Total Vessel Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom Trawl</td>
<td>7 vessels (2)</td>
<td>68 vessels</td>
</tr>
<tr>
<td>Trap</td>
<td>7 vessels (5)</td>
<td>14 vessels</td>
</tr>
<tr>
<td>MSCV Whiting</td>
<td>12 vessels (12)</td>
<td>19 vessels</td>
</tr>
<tr>
<td>Shoreside Whiting</td>
<td>19 vessels (19)</td>
<td>25 vessels</td>
</tr>
</tbody>
</table>
West Coast Exempted Fishing Permit (EFP)

EFP vs Pre-EFP:
Average Haul Review Rate & Average Actual Sort Time Comparison

- **Bottom Trawl**
  - Pre-EFP 2013: 132.7
  - Pre-EFP 2014: 114.8
  - Pre-EFP 2015: 128.6
  - EFP 2015: 195.6
  - Change: +21%

- **Fixed Gear: Trap**
  - Pre-EFP 2013: 54.1
  - Pre-EFP 2014: 84.9
  - Pre-EFP 2015: 132.5
  - EFP 2015: 111.3
  - Change: -37%

- **Mothership Catcher Vessel Whiting**
  - Pre-EFP 2013: 32.0
  - Pre-EFP 2014: 43.8
  - Pre-EFP 2015: 34.4
  - EFP 2015: 79.5
  - Change: -75%

- **Shoreside Whiting**
  - Pre-EFP 2013: 79.5
  - Pre-EFP 2014: 62.5
  - Pre-EFP 2015: 65.6
  - EFP 2015: 65.6
  - Change: -82%

- **Average Actual Sort Time (minutes)**
- **Average Review Time (± %)**
Electronic Monitoring: What’s Next?

- Whiting in regs
- Fixed Gear in regs

2016

2017
Electronic Monitoring: What’s Next?

- Whiting in regs
- Fixed Gear in regs

2016

2017

Is this thing plugged in?
Existing CFIN Programs

Report detailing each program available

- California Groundfish Catch Monitoring
- Age Reading
- Economic Data Reports
- AKFIN
- PacFIN
- AK Salmon Disaster
- Bycatch Reduction
- Observer and CM Provider Reimbursements
- Observer
- Pinnipeds
- Compliance Monitoring (CM)
- E-Tickets
E-Tickets

Electronic Monitoring & Logbooks

Compliance Monitoring

Nightly Feed

Vessel Account System

NOAA PACIFIC COAST GROUNDFISH INDIVIDUAL FISHING QUOTA NATIONAL MARINE FISHERIES SERVICE
Existing CFIN Programs

California Groundfish Catch Monitoring

Age Reading

Economic Data Reports

AKFIN

PacFIN

AK Salmon Disaster

Bycatch Reduction

Observer

Observer and CM Provider Reimbursements

Pinnipeds

Compliance Monitoring (CM)

E-Tickets

Report detailing each program available
Existing CFIN Programs

Report detailing each program available

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AKFIN
Questions?