

## **Florida (Atlantic Coast) Trawl Gear Characterization**

Prepared by the Atlantic States Marine Fisheries Commission

### ***1.1 TRAWLS***

#### **1.1.1 Shrimp Trawls**

##### *1.1.1.1 Gear Description*

Fishermen cannot use a net larger than 500 square feet (46 square meters) within one mile of Florida's coast (68B-4.0081 F.A.C.). For a general description of shrimp trawls see the gear appendix.

##### *1.1.1.2 Targeted Species*

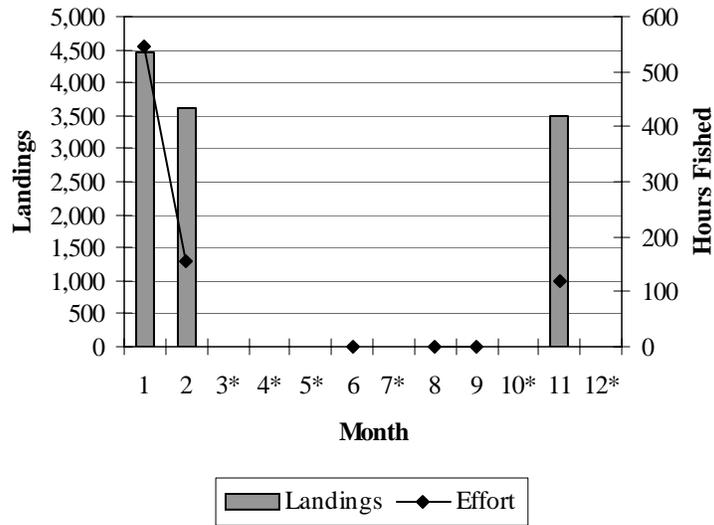
Fishermen may only use trawls to harvest shrimp and calico scallops. When allowed by rule, other species harvested as bycatch may be retained (FWC 2005b). In 2004 landings by shrimp trawls were 43% rock shrimp, 30% northern pink shrimp, 17% northern white shrimp, and 7% northern brown shrimp (ACCSP 2006).

##### *1.1.1.3 Number of Licensed and Active Fishermen*

All commercial fishermen must hold a saltwater products license (FWC 2005b). The number of saltwater products licenses issued to east coast fishermen is listed in Appendix 2. The number of active shrimp trawl fishermen in all Florida waters was 214 in 2000, 87 in 2001, 72 in 2002, 197 in 2003, and 214 in 2004 (ACCSP 2006).

##### *1.1.1.4 Effort*

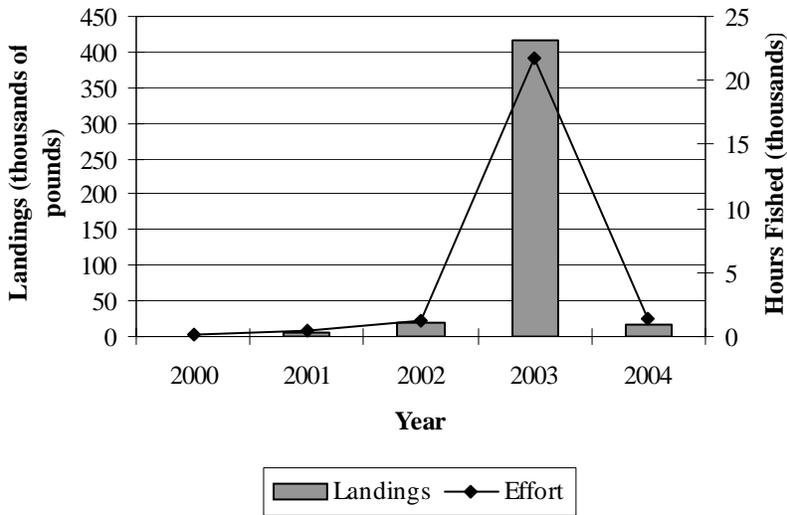
Shrimp fishermen may only fish in waters of the southeast region of the State in Dade County from November 1 to May 31 (68B-31.0135 F.A.C.). In April and May shrimp cannot be harvested in Nassau, Duval, St. Johns, Putnam, Flagler, Volusia, Seminole, Brevard, Indian River, St. Lucie, and Clay Counties (68B-31.0156 F.A.C.). Shrimp may not be harvested at night except in June, July, and August (68B-31.0157 F.A.C.) In 2004 landings and effort were highest in the winter months (Figure 1, Table 1-1). The majority of the effort took place from St. Augustine to St. Andrews Sound (ACCSP 2006). The depth fished is not known.



**Figure 1.** Shrimp trawl landings and effort in 2004 by month.  
 \*Data for March, April, May, July, October, and December are confidential.

*1.1.1.5 Status of the Fishery*

From 2000 to 2004 the highest landings and effort were in 2003 when fishermen landed 415,445 pounds in 21,725 hours fished. In 2004 landings and effort declined to near 2002 levels (Figure 2, Table 1-2).



**Figure 2.** Shrimp trawl landings and effort from 2000 to 2004.

*1.1.1.6 Sea Turtle Bycatch*

In an analysis of sea turtle interactions with shrimp trawls, Epperly et al. estimated the number of sea turtle interactions that resulted in mortality in shrimp trawls in the Gulf of Mexico and Southeast U.S. Atlantic from March to November 2001 and from December to February 2001 by subregion (latitude and longitude zones) and by depth stratum (nearshore or offshore). The number of estimated interactions that resulted in mortality (with confidence intervals given in

parentheses) in inshore waters of the south Atlantic from March to November 2001 were: less than one (zero to less than one) leatherback, 14 (eight to 19) loggerhead, eight (three to 13) Kemp's ridley, and one (zero to one) green. The number of estimated interactions that resulted in mortality in inshore waters of the south Atlantic from December to February 2001 were: less than one (zero to less than one) leatherback, six (four to nine) loggerhead, four (two to six) Kemp's ridley, and less than one (zero to less than one) green. These estimates were based on observer information from the Gulf and South Atlantic Fisheries Foundation and from aerial survey data collected in the Gulf of Mexico and U.S. Atlantic (Epperly et al. 2002). No other sea turtle bycatch information was available.

#### *1.1.1.7 Laws and Regulations*

All trawls must contain BRDs (68B-31.0045 F.A.C.) All trawls must contain TEDs, except that a single try net can be used without a TED (68B-31.004 F.A.C.). A try net used within one mile of the coast can have a headrope length no more than 10 feet (three meters) and a perimeter around the leading edge of no more than 30 feet (nine meters). A try net used beyond one mile of the coast can have a headrope length no more than 20 feet (six meters) and a perimeter around the leading edge of no more than 60 feet (18 meters) (69B-31.009 F.A.C.).

Fishermen may not use trawls with a net or bag containing more than 500 square feet (46 square meters) of mesh area in nearshore and inshore waters (all waters landward of a line one nautical mile from the Atlantic coast) (FWC 2005b). For other trawl regulations, see sections above.

### **1.1.2 Roller Trawls**

#### *1.1.2.1 Gear Description*

Fishermen cannot use a net larger than 500 square feet (46 square meters) within one mile of Florida's coast (68B-4.0081 F.A.C.). For a general description of roller trawls see the gear appendix.

#### *1.1.2.2 Targeted Species*

Fishermen may only use trawls to harvest shrimp and calico scallops. When allowed by rule, other species harvested as bycatch may be retained (FWC 2005b). In 2004 landings were 33% northern white shrimp, 30% northern pink shrimp, 27% penaeoid shrimp, and 9% northern brown shrimp (ACCSP 2006).

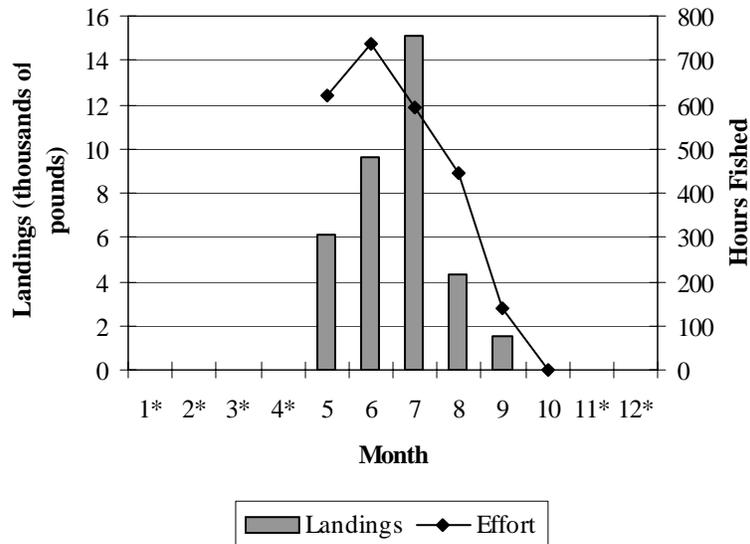
#### *1.1.2.3 Number of Licensed and Active Fishermen*

All commercial fishermen must hold a saltwater products license (FWC 2005b). The number of saltwater products licenses issued to east coast fishermen is listed in Appendix 2. The number of active roller trawl fishermen in all Florida waters was ten in 2003, and 37 in 2004. The number of active fishermen from 2000 to 2002 is confidential (ACCSP 2006).

#### *1.1.2.4 Effort*

Shrimp fishermen may only fish in waters of the southeast region in Dade County from November 1 to May 31 (68B-31.0135 F.A.C.). In April and May shrimp cannot be harvested in Nassau, Duval, St. Johns, Putnam, Flagler, Volusia, Seminole, Brevard, Indian River, St. Lucie, and Clay Counties (68B-31.0156 F.A.C.). Shrimp may not be harvested at night except in June,

July, and August (68B-31.0157 F.A.C.) In 2004 landings by roller trawls were highest in July, while effort was highest in June (Figure 3, Table 1-3). Most of the effort took place in southern Florida in the Biscayne Bay and North Florida Bay areas (ACCSP 2006). The depth fished is not known.



**Figure 3.** Roller trawl landings and effort in 2004 by month.  
 \*Data for January, February, March, April, November, and December are confidential.

*1.1.2.5 Status of the Fishery*

There was no fishing by roller trawls on Florida’s east coast from 2000 to 2002. Roller trawl fishermen fished 3,160 hours and landed 44,203 pounds in 2004 (ACCSP 20005).

*1.1.2.6 Sea Turtle Bycatch*

The Florida FWC did not provide information on sea turtle bycatch in Florida’s fisheries, and no other sea turtle bycatch information was available.

*1.1.2.7 Laws and Regulations*

All trawls must contain BRDs (68B-31.0045 F.A.C.) All trawls must contain TEDs, except that a single try net can be used without a TED (68B-31.004 F.A.C.). A try net used within one mile of the coast can have a headrope length no more than 10 feet (three meters) and a perimeter around the leading edge of no more than 30 feet (nine meters). A try net used beyond one mile of the coast can have a headrope length no more than 20 feet (six meters) and a perimeter around the leading edge of no more than 60 feet (18 meters) (69B-31.009 F.A.C.).

Fishermen may not use trawls with a net or bag containing more than 500 square feet (46 square meters) of mesh area in nearshore and inshore waters (all waters landward of a line one nautical mile from the Atlantic coast) (FWC 2005b). See sections above for additional laws and regulations regarding roller trawls.

### **1.1.3 Roller Frame Trawls**

#### *1.1.3.1 Gear Description*

Florida regulations define a roller frame trawl as a trawl with a rectangular rigid frame to keep the mouth open while being towed. The lower horizontal beam of the frame has rollers to allow the trawl to roll over the bottom and any obstructions while being towed. A grid of vertical bars shields the trawl opening, and the trawl is towed by attaching a line or towing cable to a tongue located above or at the center of the upper horizontal beam of the frame. The trawl has no doors attached to keep the mouth of the trawl open (68B-31.006 F.A.C.). Frame sizes range between ten and 16 feet (three and five meters) and the vertical opening is approximately two to 2.5 feet (61 to 76 centimeters) (Epperly et al. 2002).

When harvesting bait shrimp neither the upper nor the lower horizontal beam can be longer than 16 feet (4.9 meters) and the vertical bars shielding the opening can be spaced no more than three inches (7.6 centimeters) apart (68B-31.008 F.A.C.) Fishermen cannot use a net larger than 500 square feet (46 square meters) within one mile of Florida's coast (68B-4.0081 F.A.C.). For a general description of roller frame trawls see the gear appendix.

#### *1.1.3.2 Gear Deployment*

Most vessels haul two frames simultaneously and winches are used for gear retrieval. The average trawl time is about 25 minutes (Epperly et al. 2002).

#### *1.1.3.3 Targeted Species*

Fishermen may only use trawls to harvest shrimp and calico scallops. When allowed by rule, other species harvested as bycatch may be retained (FWC 2005b). Roller frame trawl landings in 2004 were 74% northern brown shrimp, 18% northern pink shrimp, and 7% bait shrimp (ACCSP 2006).

#### *1.1.3.4 Number of Licensed and Active Fishermen*

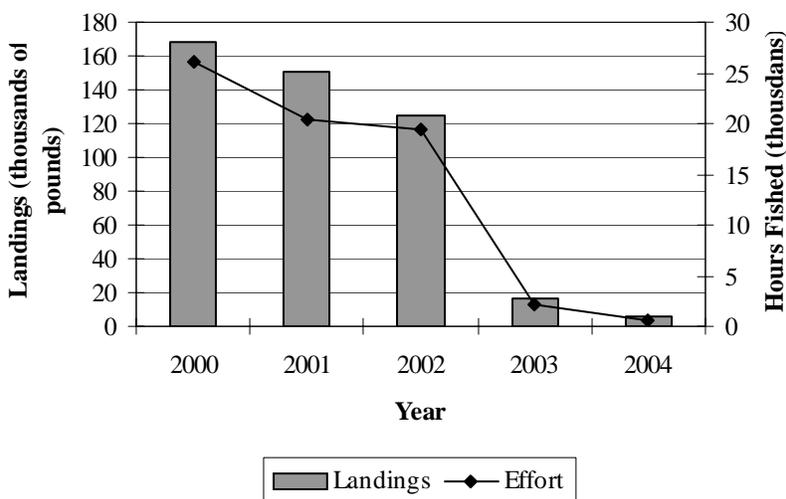
All commercial fishermen must hold a saltwater products license (FWC 2005b). The number of saltwater products licenses issued to east coast fishermen is listed in Appendix 2. The number of active roller frame trawl fishermen in all Florida waters was 69 in 2000, 83 in 2001, 88 in 2002, 72 in 2003, and 48 in 2004 (ACCSP 2006).

#### *1.1.3.5 Effort*

Fishermen use roller frame trawls in areas with seagrass and hard bottom (Epperly et al. 2002). In waters of the southeast region in Dade County shrimp fishermen may only fish from November 1 to May 31 (68B-31.0135 F.A.C.). In April and May shrimp cannot be harvested in Nassau, Duval, St. Johns, Putnam, Flagler, Volusia, Seminole, Brevard, Indian River, St. Lucie, and Clay Counties (68B-31.0156 F.A.C.). Shrimp may not be harvested at night except in June, July, and August (68B-31.0157 F.A.C.) All roller frame trawl landings and effort by month in 2004 are confidential, except that fishermen landed 2,355 pounds in 160 hours fished in February. Most of the effort took place in southern Florida in the Biscayne Bay and North Florida Bay areas (ACCSP 2006). The depth fished is not known.

### 1.1.3.6 Status of the Fishery

Roller frame trawl landings and effort declined from 168,731 pounds landed in 26,081 hours fished in 2000 to 5,978 pounds landed in 662 hours fished in 2004 (Figure 4, Table 1-4).



**Figure 4.** Roller frame trawl landings and effort from 2000 to 2004.

### 1.1.3.7 Sea Turtle Bycatch

See the section below for TED requirements in roller frame trawls. It is unlikely that a sea turtle would become entrapped within a roller frame trawl due to the required deflector bars positioned across the trawl mouth. Slow moving turtles caught in the path of the gear may become impinged against the frame for a short period and/or be overrun by the gear (Epperly et al. 2002). The Florida FWC did not provide information on sea turtle bycatch in Florida fisheries.

### 1.1.3.8 Laws and Regulations

Roller frame trawls may also be exempt from the TED requirement if the trawl meets the following four specifications: the trawl has a rectangular rigid frame to keep the mouth open with no doors attached, the lower horizontal beam of the frame has rollers to allow the trawl to roll over the bottom and any obstructions while being towed, the trawl opening is shielded by a grid of vertical bars spaced no more than three inches (7.6 centimeters) apart, and the trawl is towed by attaching a line or towing cable to a tongue located above or at the center of the upper beam of the frame (68B-31.004 F.A.C.).

Fishermen may not use trawls with a net or bag containing more than 500 square feet (46 square meters) of mesh area in nearshore and inshore waters (all waters landward of a line one nautical mile from the Atlantic coast) (FWC 2005B). See sections above for additional roller frame trawl laws and regulations.

## 1.1.4 Butterfly Nets

### 1.1.4.1 Gear Description

Fishermen cannot use a net larger than 500 square feet (46 square meters) within one mile of Florida's coast (68B-4.0081 F.A.C.). Florida regulations define a butterfly net (wing net) as a net

in the form of an elongated bag kept open by a rigid frame that is attached to either side of a vessel, and is not towed behind a vessel or dragged along the bottom (68B-31.006 F.A.C.). For a general description of butterfly/wing nets see the gear appendix.

#### 1.1.4.2 Targeted Species

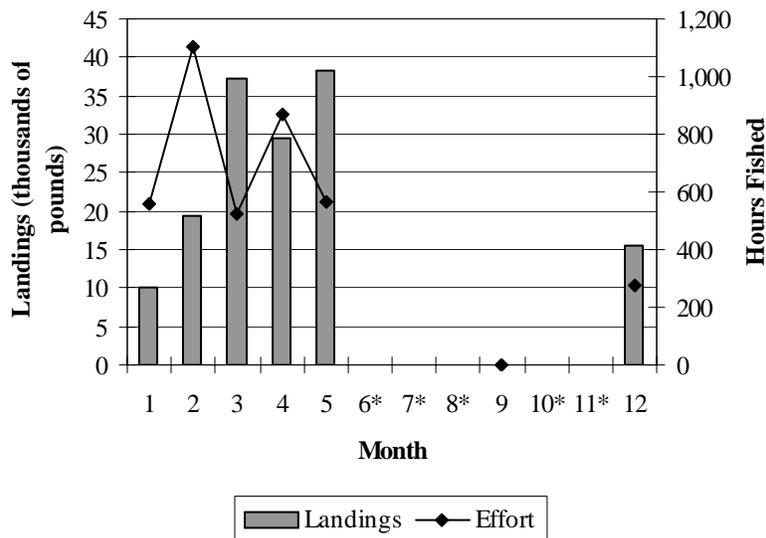
Fishermen may only use trawls to harvest shrimp and calico scallops. When allowed by rule, other species harvested as bycatch may be retained (FWC 2005b). Landings in 2004 were 77% northern pink shrimp, 13% bait shrimp, and 9% northern white shrimp (ACCSP 2006).

#### 1.1.4.3 Number of Licensed and Active Fishermen

All commercial fishermen must hold a saltwater products license (FWC 2005b). The number of saltwater products licenses issued to east coast fishermen is listed in Appendix 2. The number of active butterfly net fishermen in all Florida waters was 263 in 2000, 163 in 2001, 113 in 2002, 54 in 2003, and 103 in 2004 (ACCSP 2006).

#### 1.1.4.4 Effort

Butterfly nets are allowed for commercial shrimp harvest in Biscayne Bay and live bait harvest in inshore waters of Volusia County (Epperly et al. 2002). In April and May shrimp cannot be harvested in Nassau, Duval, St. Johns, Putnam, Flagler, Volusia, Seminole, Brevard, Indian River, St. Lucie, and Clay Counties (68B-31.0156 F.A.C.). Shrimp may not be harvested at night except in June, July, and August (68B-31.0157 F.A.C.) Butterfly net effort in 2004 was highest in February, while landings were highest in May (Figure 5, Table 1-5). Much of the effort was concentrated in southern Florida in the Biscayne Bay and North Florida Bay areas, though fishermen also fished from Daytona Beach to Melbourne Beach (ACCSP 2006). The depth fished is not known.

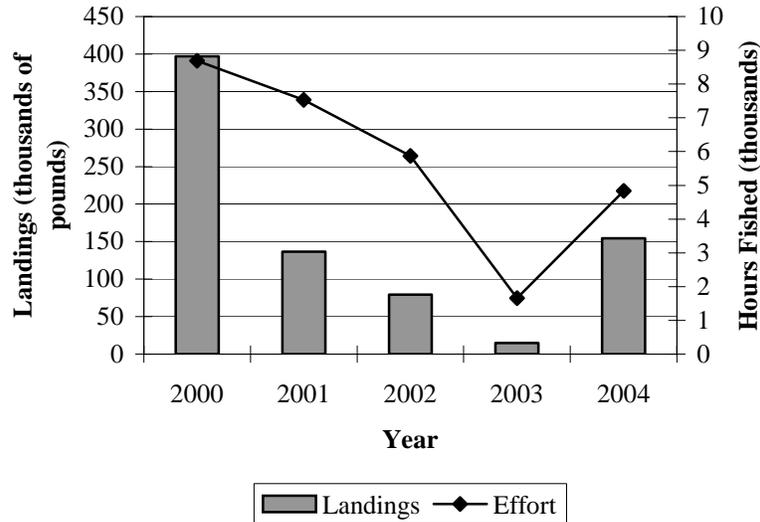


**Figure 5.** Butterfly net landings and effort in 2004 by month.

\*Data from June, July, August, October, and November are confidential.

#### 1.1.4.5 Status of the Fishery

From 2000 to 2004 landings and effort were highest in 2000 when fishermen landed 396,936 pounds in 8,686 hours fished. Landings and effort declined to a low of 14,662 pounds landed in 1,656 hours fished in 2003, then increased to 154,363 pounds landed in 4,839 hours fished in 2004 (Figure 6, Table 1-6).



**Figure 6.** Butterfly net landings and effort from 2000 to 2004.

#### 1.1.4.6 Sea Turtle Bycatch

Butterfly nets have tow time limits of 55 minutes from April 1 to October 31 and 75 minutes from November 1 to March 31, and are exempt from TED regulations (Epperly et al. 2002). The Florida FWC did not provide information on sea turtle bycatch in Florida fisheries.

#### 1.1.4.7 Laws and Regulations

Fishermen may not use trawls with a net or bag containing more than 500 square feet (46 square meters) of mesh area in nearshore and inshore waters (all waters landward of a line one nautical mile from the Atlantic coast) (FWC 2005b). See sections above for additional laws and regulations regarding butterfly/wing nets.

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## APPENDIX 1. DATA TABLES

Table 1-1. Shrimp trawl landings and effort in 2004 by month.

<b>Month</b>	<b>Landings (pounds)</b>	<b>Hours Fished</b>
<b>1</b>	4,467	544
<b>2</b>	3,609	156
<b>3</b>	*	*
<b>4</b>	*	*
<b>5</b>	*	*
<b>6</b>	0	0
<b>7</b>	*	*
<b>8</b>	0	0
<b>9</b>	0	0
<b>10</b>	*	*
<b>11</b>	3,493	120
<b>12</b>	*	*

\*Data is confidential

Table 1-2. Shrimp trawl landings and effort from 2000 to 2004.

<b>Year</b>	<b>Landings (pounds)</b>	<b>Hours Fished</b>
<b>2000</b>	1,356	122
<b>2001</b>	6,460	423
<b>2002</b>	19,520	1,279
<b>2003</b>	415,445	21,725
<b>2004</b>	17,242	1,370

Table 1-3. Roller trawl landings and effort in 2004 by month.

<b>Month</b>	<b>Landings (pounds)</b>	<b>Hours Fished</b>
<b>1</b>	*	*
<b>2</b>	*	*
<b>3</b>	*	*
<b>4</b>	*	*
<b>5</b>	6,078	620
<b>6</b>	9,641	736
<b>7</b>	15,140	594
<b>8</b>	4,340	443
<b>9</b>	1,510	138
<b>10</b>	0	0
<b>11</b>	*	*
<b>12</b>	*	*

\*Data is confidential.

Table 1-4. Roller frame trawl landings and effort from 2000 to 2004.

<b>Year</b>	<b>Landings (pounds)</b>	<b>Hours Fished</b>
<b>2000</b>	168,731	26,081
<b>2001</b>	151,053	20,316
<b>2002</b>	125,289	19,315
<b>2003</b>	16,087	2,186
<b>2004</b>	5,978	662

Table 1-5. Butterfly net landings and effort in 2004 by month.

<b>Month</b>	<b>Landings (pounds)</b>	<b>Hours Fished</b>
<b>1</b>	10,061	560
<b>2</b>	19,468	1,102
<b>3</b>	37,267	522
<b>4</b>	29,539	867
<b>5</b>	38,320	568
<b>6</b>	*	*
<b>7</b>	*	*
<b>8</b>	*	*
<b>9</b>	0	0
<b>10</b>	*	*
<b>11</b>	*	*
<b>12</b>	15,431	277

\*Data is confidential.

Table 1-6. Butterfly net landings and effort from 2000 to 2004.

<b>Year</b>	<b>Landings (pounds)</b>	<b>Hours Fished</b>
<b>2000</b>	396,936	8,686
<b>2001</b>	136,511	7,528
<b>2002</b>	79,157	5,870
<b>2003</b>	14,662	1,656
<b>2004</b>	154,363	4,839