

## **Briefing Statement**

From: Delta Smelt Working Group

To: Water Operations Management Team

Date: May 15, 2007

Re: Recommendations for Spring Action

### Problem:

To date, the 2007 20-mm Survey for juvenile delta smelt has collected record low numbers of juvenile delta smelt. After the fifth of eight surveys, only 25 individuals have been collected, about 7.7 percent of the 326 taken to this point in 2006, and only 7.1% of the 2000-2006 average of 353. The DSWG has reviewed the progression of catches that typically occur during the course of the 20-mm Survey to evaluate the chance that there will be an upswing in the number of larvae collected later this year that will bring 2007 catches more in line with previous years. The group considers such an increase in catches to be possible but unlikely.

The likelihood of a very low outcome creates a very high degree of concern for the Delta Smelt Working Group. Water temperatures in the Delta have risen above the range wherein the majority of delta smelt spawning occurs, meaning that very little additional spawning is likely to take place this year. Further, the most recent 20-mm Survey results shows that delta smelt are distributed in the central Delta, increasing the risk of entrainment. In fact, the first salvage of delta smelt juveniles were observed at the Federal water export facility on May 11. For an annual species such as delta smelt, failure to recruit a new year-class is an urgent indicator that the species has become critically imperiled and an emergency response is warranted.

### Recommendation:

The goal is no further entrainment of delta smelt. To achieve this, the Projects should modify flows to achieve a non-negative daily net flow (meaning daily net flow should not be southward) in Old and Middle River. This should be implemented as soon as possible and continue until southern Delta water temperatures reach 25<sup>0</sup>C, the lab-lethal limit.

### Uncertainties:

(1) The DSWG recognizes that water project operations are not the only forces driving down delta smelt numbers. Although we are confident the proposed action will reduce entrainment, it is uncertain whether it will substantially increase the percentage of this year's recruit class that survives to reproduce next winter. (2) The group also recognizes that it may not be possible, given flows and constraints on Project pumping, to achieve a zero net flow in Old and Middle River. (3) Given that delta smelt densities appear to be near the lower limit at which the 20-mm Survey may reliably detect them, our ability to accurately assess distribution of delta smelt larvae and to evaluate the efficacy of the recommended action is likely to be very low. (4) There is no prescriptive recommendation regarding the Head of Old River Barrier (HORB); however, it is possible that the HORB's influence on OMR flow may be significant. Removing the barrier may therefore be a possible management tool to achieve the Working Group's recommendation.

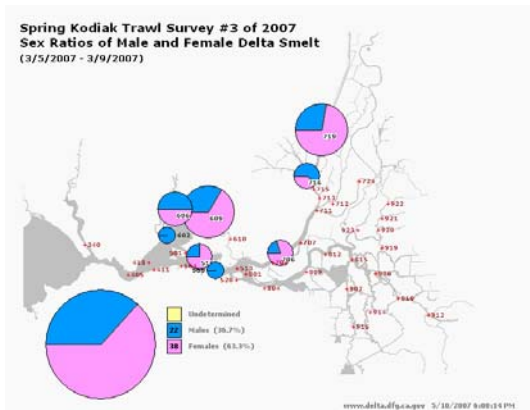
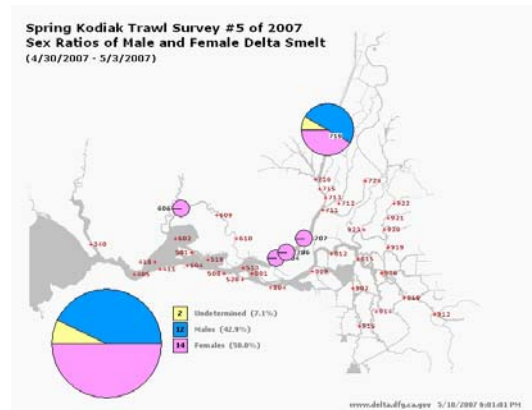
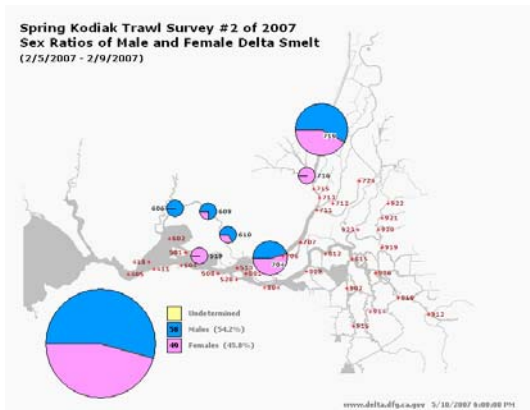
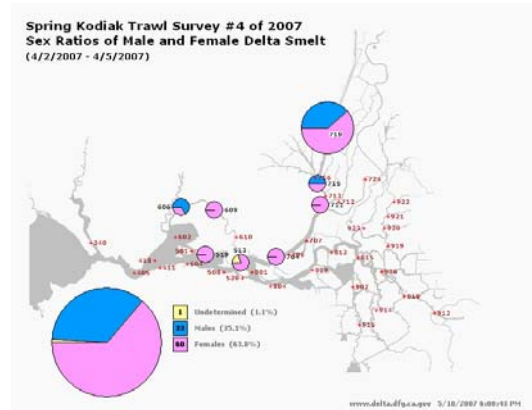
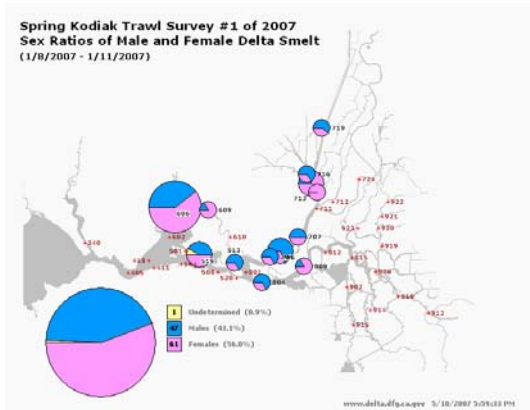
Management Implications:

The water cost of the recommended operational change is presently unknown, but may be significant.

Attachments:

1. Summary of Spring Kodiak Trawl survey for pre-spawning adult delta smelt
2. Summary of 20-mm Trawl survey for juvenile delta smelt
3. Frequency Distribution for 20-mm Survey
4. Frequency Distributions of Delta Smelt in the 20-mm Survey, 1995-2007
5. Frequency Distribution of Delta Smelt in the 20-mm Survey, 1995-2007. Equal scale on x-axis.

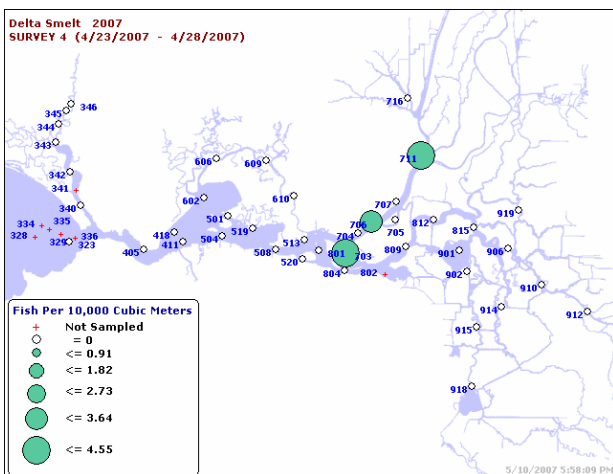
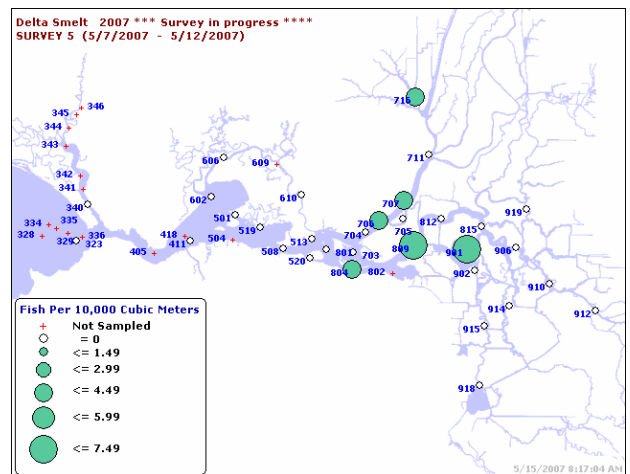
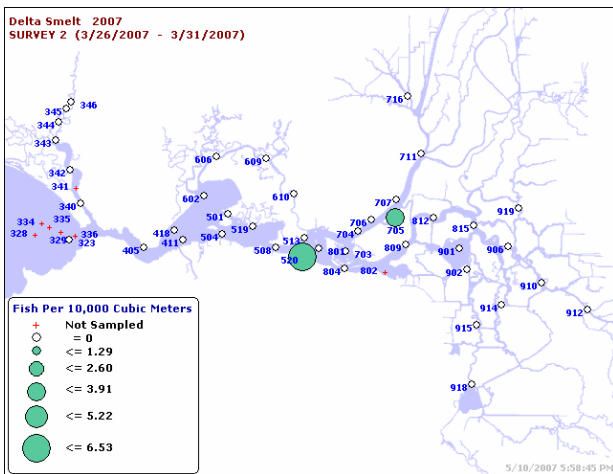
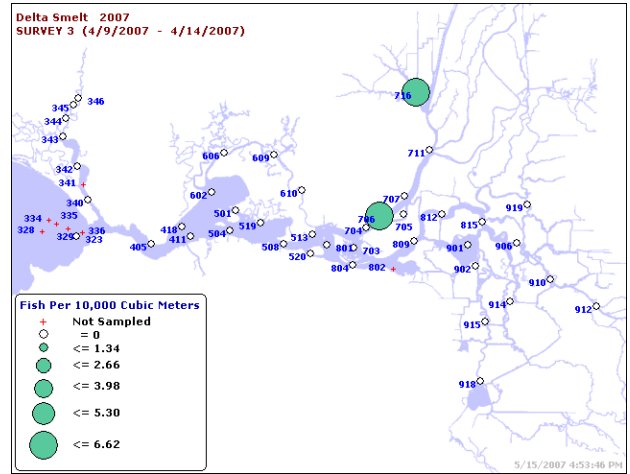
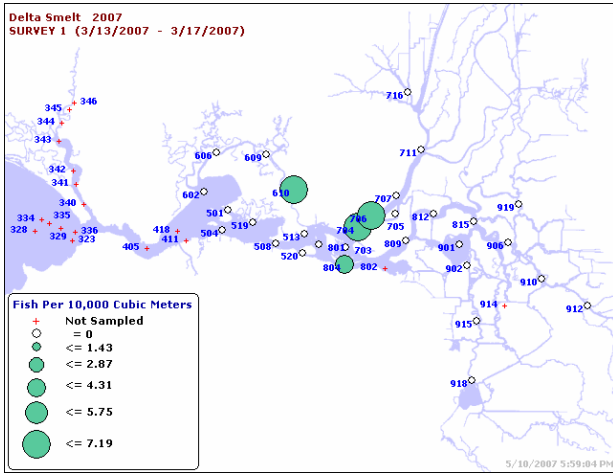
**Attachment 1.** Summary of Spring Kodiak Trawl survey for pre-spawning adult delta smelt, 2007. Note that the distribution of adult delta smelt appears to be favorable, with regard to risk of entrainment. Overall numbers collected were low relative to previous years.



Comparison of SKT surveys, by year

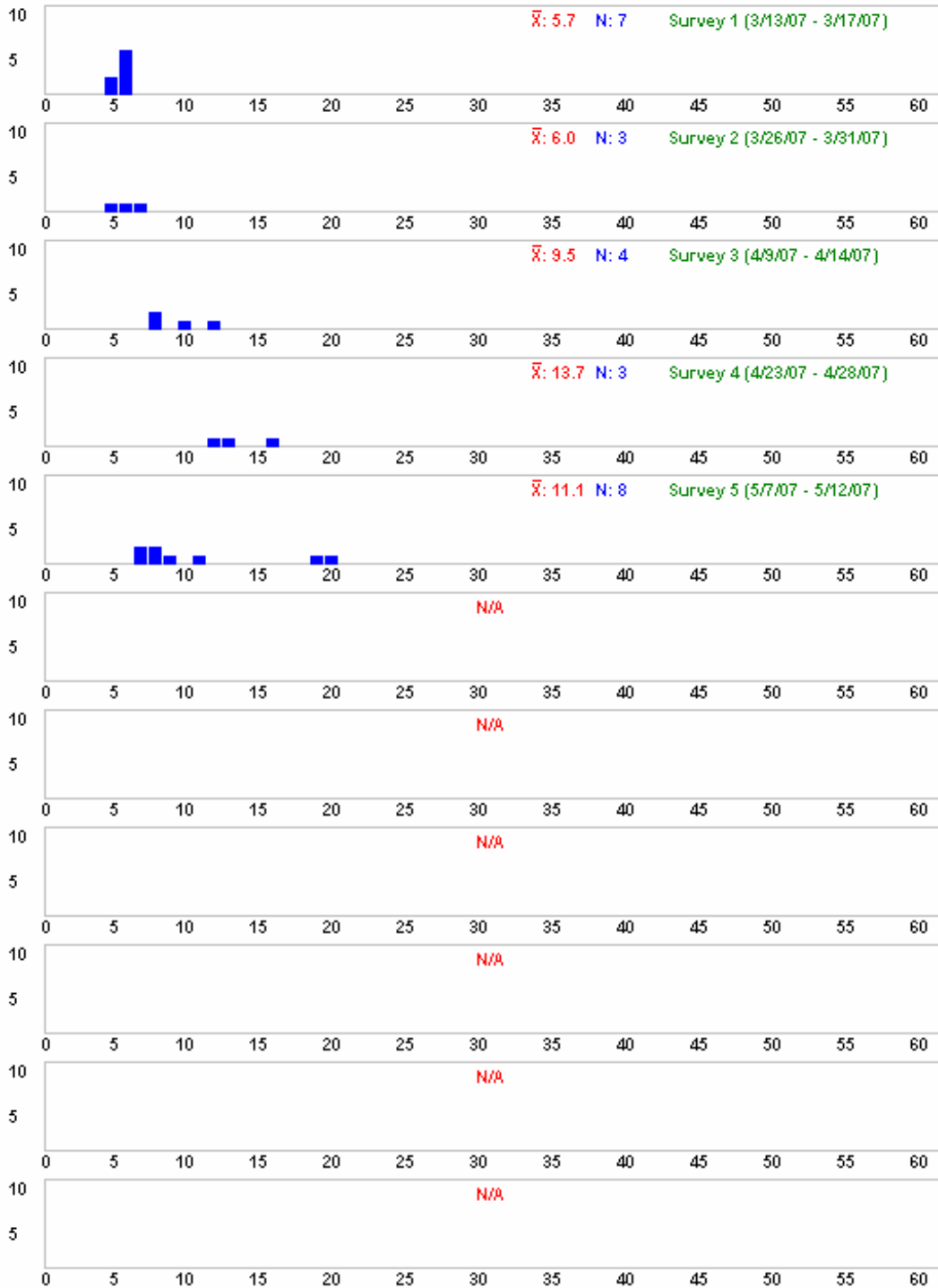
	2007	2006	2005	2004	2003	2002
1	109	42	220	380	232	261
2	107	84	218	300	373	392
3	60	70	27	196	43	238
4	94	77	28	62	33	-
5	28	14	-	13	-	-
N	398	287	493	951	681	891

**Attachment 2.** Summary of 20-mm Trawl survey for juvenile delta smelt, 2007. Early distributions of juveniles were similar to adult distribution as indicated by SKT results, but the latest survey results are less favorable. Overall numbers collected were extremely low relative to previous years.

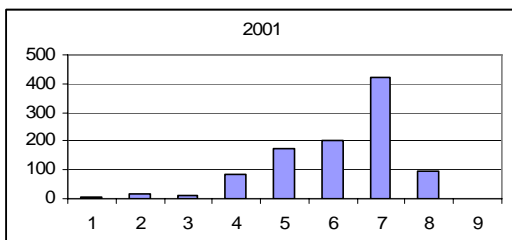
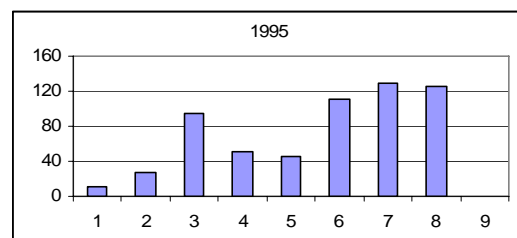
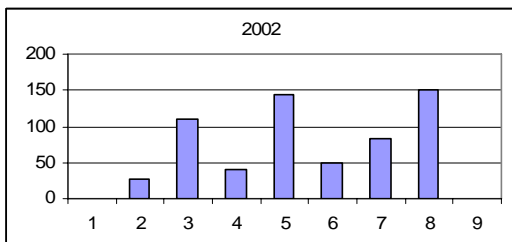
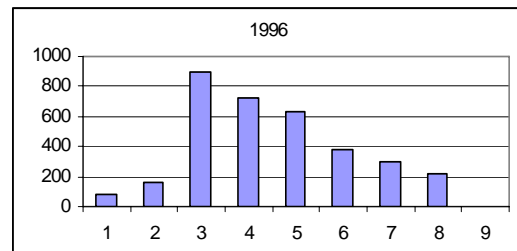
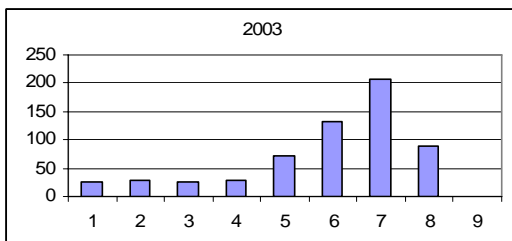
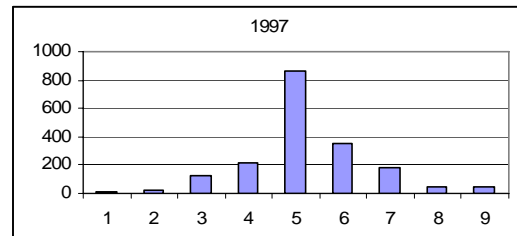
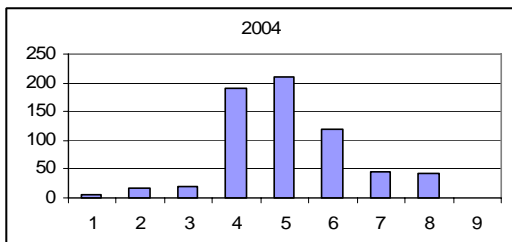
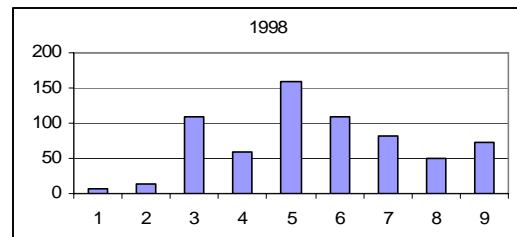
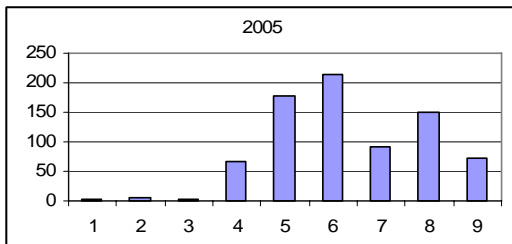
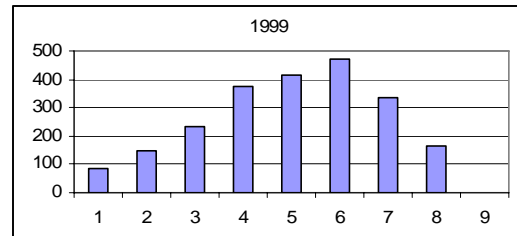
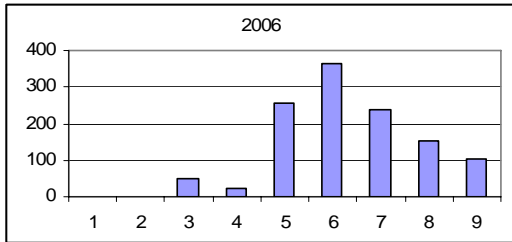
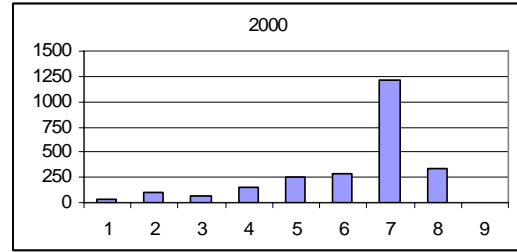
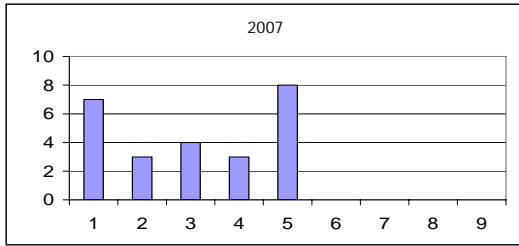


**Attachment 3.** Frequency Distribution of Catch, 20-mm Survey, 2007.

**Delta Smelt Length Frequency for 2007**

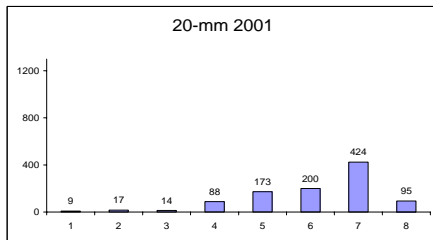
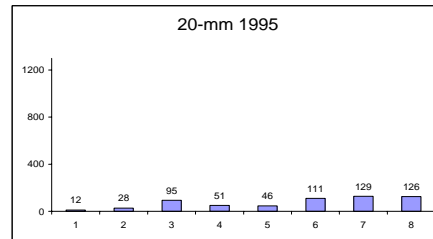
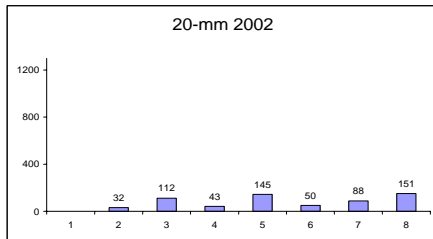
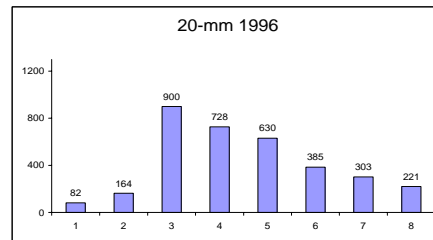
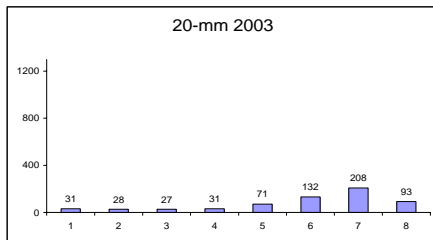
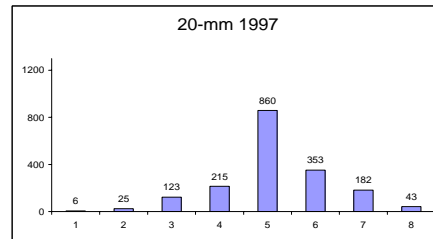
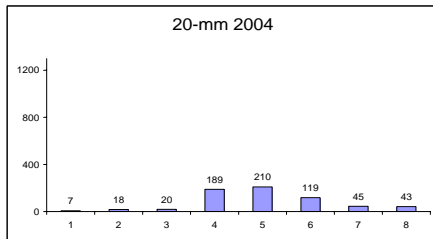
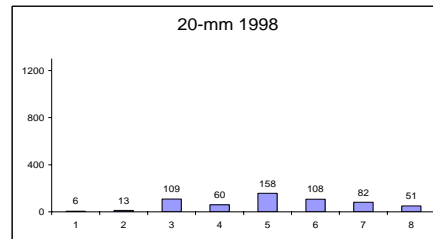
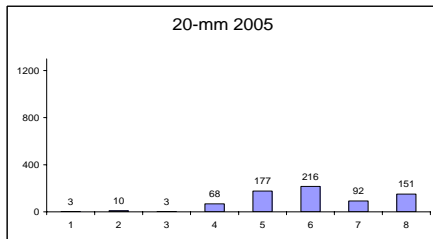
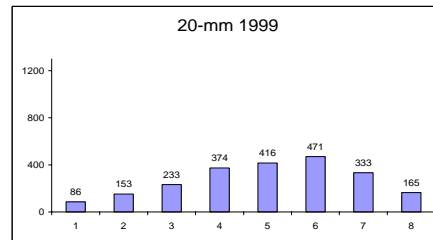
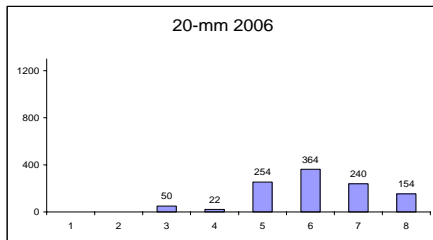
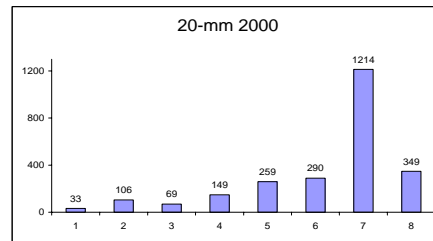
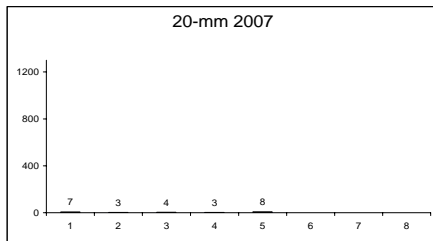


**Attachment 4.** Frequency Distributions of Delta Smelt in the 20-mm Survey, 1995-2007.



The vertical axis is number collected in the CDFG 20-mm Survey. The horizontal axis is survey number.

**Attachment 5.** Frequency Distribution of Delta Smelt in the CDFG 20-mm Survey, 1995 to 2007. Equal scale on x-axis.



The vertical axis is number collected in the CDFG 20-mm Survey. The horizontal axis is survey number.