METHODS TO PRODUCE MAPS OF DISTRIBUTION OF LONGFIN SMELT

Monitoring data.— In this study, we reviewed all available monitoring programs and datasets that detected longfin smelt in the Estuary. California Department of Fish and Game, the United States Fish and Wildlife Service (USFWS), and other agencies that comprise the Interagency Ecological Program (IEP) provide data on the distribution, frequency of occurrence, and abundance of Estuary longfin smelt at various life stages. The following six surveys provide data ranging from 1967 – 2009: the Bay Midwater Trawl (BMWT), Bay Otter Trawl (BOT), Fall Midwater Trawl (FMWT), Spring Kodiak Trawl (SKT), 20mm Trawl (20mm), and Summer Townet Survey (STN). The strengths and weaknesses of each survey type have been summarized previously (Bennett 2005). Regional data from non-IEP surveys (see Table 2) were use together with these six surveys to determine geographic extent of range.

Observed geographic extent.— We used six main surveys and a wide range of other publically-available survey data to identify the geographic extent of Estuary longfin smelt. We considered all years of available data for each monitoring program (Table 3). Longfin smelt were considered 'detected' when they were present at any given sampling site at least once. Otherwise they were designated 'not observed'. Probability of detection is not available for all survey and gear types, so we did not consider longfin smelt 'absent' from locations where they were not detected (Pearce and Boyce 2006).

Life stage determinations.— Delineations of longfin smelt age classes: Age-0, -1, and -2, were based on fork-length criteria established by Baxter (1999) (Table 4) giving consideration to gear description, months of sampling, and length frequency distribution of these data. Three seasonal periods for each year were selected based on common

survey periods spring (January through April), Summer (May through August) and fall (September through December).

Mapped spatial distribution.— We mapped the spatial distribution of longfin smelt by life-stage and season to identify how the predominant majority (90%) of the longfin smelt of each life stage was typically distributed, and the location of marginal observations (the next 9% of observed longfin smelt). We excluded incidental observations (the remaining 1%) that may of little relevance to the overall distribution. We used the BOT survey dataset, which provided the highest catch across the greatest range (extending into San Francisco Bay when several other IEP surveys did not) and conducted throughout the year (for 12 months when other IEP surveys were of limited duration), to generate the maps of the relative concentrations of Estuary longfin smelt by life stage. Specifically, we first corrected the catch data for the volume of water sampled, so that the volumes of water sampled did not influence the catch results. Next we summed the catch across surveys for each life stage (see Table 1 for delineation of life stages) for the months of the season being considered. For the "Spring" for Age-0 and Age-1 fish, we used the months from January to April. For Age-2 we used December through May in order to capture the extended spawning season. Then we calculated the relative distribution within a year by calculating the percentage of longfin smelt of each life stage observed at each station during the season of each year by the total number of longfin smelt of that life stage in that season observed in the entire estuary (see Tables 4-6). We then calculated a simple average across years. Aggregating in this way provided an equal weighting between years, regardless of the abundance. Finally, for each life stage and season, we identified the minimum number of stations that accounted for 90% of the observed

longfin smelt, and then identified the minimum number of stations that, together with the previous group, accounted for 99% of the observed longfin smelt.

The predominant (90% of the sampled longfin smelt) distribution was depicted with darker circles on the maps. The minor distribution (next ~9%) were depicted with lighter circles, and the extent of the range of the survey was shown with a solid line.

TABLE 1.—This table provides the life stage cutoff lengths by month for longfin smelt based on Baxter (1999).

		Cutoff lengths (mm) separating age-0 from age-1	**Age-1**	Cutoff lengths (mm) separating age-1 from age-2	**Age-2**
1	**Jan**	40	41-90	90	>90
2	**Feb**	42	43-93	93	>93
3	**Mar**	46	47-96	96	>96
4	**Apr**	52	53-100	100	>100
5	**May**	59	60-105	105	>105
6	**Jun**	67	68-108	108	>108
7	**Jul**	71	72-111	111	>111
8	**Aug**	75	76-114	114	>114
9	**Sep**	80	81-117	117	>117
10	**Oct**	83	84-120	120	>120
11	**Nov**	85	86-123	123	>123
12	**Dec**	87	88-125	125	>125

TABLE 2. —List of projects, survey type, time-periods and sources of monitoring survey data used for longfin smelt geographic extent range map.

Survey Type	Time Period	Project/Studies	Source	Agency
20 Tow Net	1995-2009	IEP	CDFG	CDFG
Bay Midwater Trawl	1980-2008	IEP	CDFG	CDFG
Fall Midwater Trawl	1967-2009	IEP	CDFG	CDFG
Plankton Net	1980-1989	IEP	CDFG	CDFG
Spring Kodiak Trawl	2002-2009	IEP	CDFG	CDFG
Summer Tow Net	1959-2009	IEP	CDFG	CDFG
Beach Seine	1979-2009	Distribution	USFWS	USFWS
Kodiak experimental trawl	2001	Distribution	USFWS	USFWS
Kodiak Trawl	1976-2008	Distribution	USFWS	USFWS
Mid-water Trawl	1976-2008	Distribution	USFWS	USFWS
Push Net	1992-1994	Distribution	USFWS	USFWS
Rotary Screw Trap	1990-2005	Monitoring	BDAT	EBMUD
Beach Seine	1979 - 2005	Suisun Marsh Fisheries Monitoring	BDAT	UCD
Larval Sled	1994 - 1998	Suisun Marsh Fisheries Monitoring	BDAT	UCD
Midwater Trawl	1980s-1990s	Suisun Marsh Fisheries Monitoring	BDAT	UCD
Otter Trawl	1979 - 2005	Suisun Marsh Fisheries Monitoring	BDAT	UCD
Beach Seine	1998-2005	Yolo Bypass Study	BDAT	DWR
Fyke Net	1998	Yolo Bypass Study	BDAT	DWR
Fyke Trap	1999-2005	Yolo Bypass Study	BDAT	DWR
Purse Seine	1998	Yolo Bypass Study	BDAT	DWR
Rotary Screw Trap	1998-2005	Yolo Bypass Study	BDAT	DWR
Rotary Screw Trap	1999-2002	Yolo Bypass Study	Sommer et al. 2004	DWR
Seine, Electrofishing	1998-2005	Floodplain monitoring: Native and Alien Fish	Moyle et al. 2007	UCD
Electrofishing	1980s-2000s	Littoral Fish Assemblages of the Alien-dominated Sacramento-San Joaquin Delta	Brown and Michniuk 2007	USFWS/ CDFG
Seining, Backpack Electrofishing Surveys, Boat Electrofishing surveys	1997-2004	Fish Community Survey	Merz and Saldate 2005	EBMUD
Ichthyoplankton net	1990-2000	Spatial and temporal distribution of native and alien ichthyoplankton in the Delta	Grimaldo et al. 2004	DWR
Beach Seine	1979s-1999s	Native Alien Fishes in a California Estuarine	Matern et al. 2002	UCD
Otter Trawl	1979s-1999s	Native Alien Fishes in a California Estuarine	Matern et al. 2002	UCD
Seining, rotary screw trap	1990s-2000s	Stream Evaluation	Snider and Titus 2000, Snider et al. 1998, R. Titus (pers. comm.)	CDFG
Otter Trawl	1963-1964	Ecological Studies of the Sacramento-San Joaquin Delta: Fishes of the Delta	Radtke 1966	CDFG
Beach Seine	1990-2000	Calaveras River Barrier Removal Program - West Delta Survey	T. Kennedy (pers. comm., July 2010)	FFC
Seining, rotary screw trap	1990s-2000s	Stream Evaluation	R. Titus (pers. comm.)	CDFG

TABLE 3.—Summary of monitoring period, location, size ranges and age groups for Estuary longfin smelt.

Monitoring Program	Years	Sampling Period and Location	Fork length ranges (mm)	Age Groups	Dominant Age Groups
1. BMWT	1980-2008	Jan-Dec, S. San Francisco Bay to Delta	40-203	Age-0 to -2	Age-0, -1
2. BOT	1980-2008	Jan-Dec, S. San Francisco Bay to Delta	40-197	Age-0 to -2	Age-0, -1
3. FMWT	1967-2009	Sep-Dec, San Pablo Bay to Delta	15-282	Age-0 to -2	Age-0, -1
4. SKT	2002-2009	Jan-Jul, Suisun Bay to Delta	15-135	Age-0 to -2	Age-0, -1
5. 20mm	1995-2009	Mar-Aug, Napa River to Delta	3-236	Age-0	Age-0
6. STN	1959-2009	Jun-Sep, Suisun Bay to Delta	7-141	Age-0 to -1	Age-0

Table 4

Longfin Smelt - Bay Otter Trawl; Relative Distribution By Station

Spring Age 0

																	90%	Minor
Station	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Grand Total		
101			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
102			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
103			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
104			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
105			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
106			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
107			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
108			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
109			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
110			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
140			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
142			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
211			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
212			0%		0%	0%		0%	0%	0%	0%	0%	19%			2.1%		2.1%
213			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
214			0%		0%	0%		0%	62%	0%	0%	0%	0%			6.8%	6.8%	
215			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
216			0%		0%	0%		0%	0%	0%	0%	0%	81%			9.0%	9.0%	
243			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
244			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
317			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
318			0%		0%	0%		0%	38%	0%	0%	0%	0%			4.3%		4.3%
319			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
320			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
321			18%		0%	0%		0%	0%	0%	50%	0%	0%			7.5%	7.5%	
322			71%		0%	0%		35%	0%	0%	50%	0%	0%			17.3%	17.3%	
323			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
325			0%		0%	0%		0%	0%	0%	0%	100%	0%			11.1%	11.1%	
345			0%		0%	53%		0%	0%	0%	0%	0%	0%			5.9%	5.9%	
346			0%		0%	47%		0%	0%	0%	0%	0%	0%			5.2%	5.2%	
427			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
428			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
429			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
430			11%		0%	0%		0%	0%	0%	0%	0%	0%			1.3%		1.3%
431			0%		100%	0%		0%	0%	0%	0%	0%	0%			11.1%	11.1%	
432			0%		0%	0%		0%	0%	100%	0%	0%	0%			11.1%	11.1%	
433			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
447			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
534			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
535			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
736			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
750			0%		0%	0%		65%	0%	0%	0%	0%	0%			7.2%	7.2%	
751			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
752			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
760			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
761			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
762			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
837			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
853			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
863			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
864			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
865			0%		0%	0%		0%	0%	0%	0%	0%	0%			0.0%		
Grand Total	0%	0%	100%	0%	100%	100%	0%	100%	100%	100%	100%	100%	100%	0%	0%	100.0%	92.3%	7.7%

Table 5

Longfin Smelt - Bay Otter Trawl; Relative Distribution By Station
Spring Age 1

																		90%	Minor
Station	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Grand Total			
101	0%	5%	2%	0%	0%	5%	2%	0%	21%	11%	2%	11%	0%	0%	0%	4.0%	4.0%		
102	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0.2%		0.2%	
103	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%	0.2%			
104	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	2%	0%	0%	2%	0%	0.5%		0.5%	
105	0%	0%	0%	0%	0%	0%	2%	1%	0%	0%	2%	2%	0%	0%	14%	1.4%	1.4%		
106	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	18%	0%	0%	1.3%		1.3%	
107	0%	0%	2%	5%	19%	0%	3%	44%	0%	0%	1%	4%	0%	0%	0%	5.1%	5.1%		
108	0%	0%	1%	40%	18%	2%	0%	2%	0%	8%	4%	3%	2%	13%	44%	9.2%	9.2%		
109	0%	0%	0%	0%	0%	1%	3%	1%	0%	4%	1%	0%	6%	0%	0%	1.0%		1.0%	
110	1%	0%	0%	0%	0%	1%	2%	1%	0%	3%	0%	0%	0%	7%	0%	1.0%		1.0%	
140	0%	4%	1%	0%	0%	0%	1%	2%	0%	1%	1%	0%	0%	0%	0%	0.7%		0.7%	
142	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%			
211	7%	4%	3%	0%	4%	3%	3%	1%	0%	1%	0%	1%	0%	5%	0%	2.2%	2.2%		
212	0%	5%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	1.3%		1.3%	
213	2%	0%	0%	2%	0%	4%	5%	1%	0%	0%	0%	0%	0%	0%	22%	2.4%	2.4%		
214	21%	0%	0%	1%	0%	0%	0%	0%	7%	1%	6%	2%	0%	2%	0%	2.7%	2.7%		
215	7%	0%	0%	1%	7%	4%	0%	0%	0%	0%	2%	3%	0%	3%	0%	1.8%	1.8%		
216	9%	13%	11%	0%	7%	13%	6%	1%	11%	2%	1%	0%	7%	22%	0%	6.7%	6.7%		
243	4%	0%	10%	1%	0%	2%	0%	0%	0%	0%	0%	0%	0%	3%	0%	1.3%		1.3%	
244	5%	0%	1%	0%	10%	1%	0%	0%	0%	0%	0%	0%	24%	0%	0%	2.7%	2.7%		
317	0%	0%	1%	1%	0%	7%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0.7%		0.7%	
318	0%	0%	2%	0%	0%	0%	1%	1%	4%	2%	2%	6%	3%	2%	0%	1.6%	1.6%		
319	0%	17%	1%	2%	0%	0%	4%	3%	0%	2%	4%	1%	2%	1%	0%	2.4%	2.4%		
320	13%	9%	2%	0%	0%	2%	1%	3%	9%	1%	6%	2%	0%	7%	21%	5.1%	5.1%		
321	5%	4%	5%	5%	0%	17%	0%	0%	7%	28%	13%	7%	8%	7%	0%	7.0%	7.0%		
322	2%	0%	29%	0%	0%	1%	5%	3%	0%	8%	13%	2%	2%	6%	0%	4.7%	4.7%		
323	2%	4%	2%	12%	0%	0%	4%	1%	0%	0%	4%	2%	10%	3%	0%	2.9%	2.9%		
325	0%	5%	1%	2%	0%	3%	0%	6%	8%	2%	2%	25%	2%	2%	0%	3.9%	3.9%		
345	0%	4%	4%	2%	3%	5%	13%	0%	0%	11%	2%	0%	3%	0%	0%	3.2%	3.2%		
346	1%	9%	3%	1%	0%	5%	10%	0%	4%	2%	1%	1%	3%	1%	0%	2.7%	2.7%		
427	0%	0%	1%	4%	3%	9%	1%	2%	0%	1%	4%	1%	0%	0%	0%	1.7%	1.7%		
428	0%	0%	1%	0%	0%	2%	8%	0%	0%	5%	10%	1%	0%	0%	0%	1.8%	1.8%		
429	2%	0%	2%	6%	0%	0%	1%	0%	9%	1%	0%	0%	0%	1%	0%	1.5%	1.5%		
430	5%	0%	1%	0%	0%	0%	0%	2%	0%	0%	6%	9%	0%	2%	0%	1.8%	1.8%		
431	1%	0%	1%	0%	5%	0%	2%	0%	16%	1%	2%	5%	0%	5%	0%	2.6%	2.6%		
432	2%	10%	1%	1%	0%	3%	0%	4%	0%	2%	4%	2%	0%	0%	0%	1.8%	1.8%		
433	3%	0%	1%	1%	5%	1%	5%	3%	0%	0%	1%	1%	5%	1%	0%	1.7%	1.7%		
447	1%	0%	1%	0%	5%	1%	6%	4%	0%	1%	3%	0%	0%	2%	0%	1.6%	1.6%		
534	0%	0%	1%	0%	0%	0%	0%	5%	3%	0%	1%	4%	0%	0%	0%	0.9%		0.9%	
535	5%	7%	10%	0%	14%	5%	7%	3%	0%	0%	1%	2%	0%	1%	0%	3.6%	3.6%		
736	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0.2%			
750	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0.1%			
751	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0.0%			
752	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%			
760	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%			
761	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0.1%			
762	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%			
837	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%			
853	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%			
863	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%			
864	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%			
865	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%			
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100.0%	90.0%	8.9%	

Table 6

Longfin Smelt - Bay Otter Trawl; Relative Distribution By Station
Spring Age 2

																	90%	Minor
Station	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Grand Total		
101	9%	0%	3%	3%	4%	2%	0%	0%	6%	3%	2%	3%	24%	0%	0%	3.8%	3.8%	
102	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%		
103	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%		
104	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	0%	3%	0%	0%	0.4%		0.4%
105	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	1%	3%	0%	0%	0%	0.5%		0.5%
106	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	12%	0%	0%	0.9%		0.9%
107	15%	0%	0%	5%	6%	0%	0%	22%	3%	0%	4%	2%	0%	0%	0%	3.7%	3.7%	
108	0%	0%	0%	4%	0%	3%	0%	1%	0%	3%	0%	7%	0%	18%	5%	2.7%	2.7%	
109	0%	0%	0%	0%	0%	0%	0%	0%	8%	10%	0%	0%	4%	0%	0%	1.5%	1.5%	
110	0%	6%	0%	3%	0%	1%	0%	5%	8%	11%	3%	1%	0%	0%	5%	3.0%	3.0%	
140	9%	2%	0%	1%	0%	3%	1%	1%	0%	0%	1%	0%	0%	0%	0%	1.3%	1.3%	
142	0%	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0.1%		
211	0%	0%	2%	0%	4%	2%	2%	1%	2%	2%	1%	0%	0%	3%	0%	1.2%	1.2%	
212	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0.3%		0.3%
213	0%	0%	6%	2%	0%	0%	2%	0%	8%	0%	0%	0%	0%	4%	5%	1.7%	1.7%	
214	19%	3%	0%	1%	4%	1%	2%	1%	0%	2%	2%	4%	4%	0%	0%	2.9%	2.9%	
215	11%	0%	6%	4%	0%	4%	9%	0%	2%	1%	7%	8%	5%	7%	0%	4.2%	4.2%	
216	6%	16%	11%	0%	6%	8%	5%	3%	8%	4%	3%	2%	0%	15%	5%	6.2%	6.2%	
243	0%	0%	1%	1%	0%	0%	0%	1%	0%	0%	0%	2%	0%	0%	0%	0.4%		0.4%
244	4%	0%	0%	1%	14%	0%	0%	1%	0%	0%	0%	0%	12%	0%	0%	2.1%	2.1%	
317	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0.2%		
318	6%	0%	5%	2%	0%	4%	0%	5%	0%	1%	0%	0%	0%	0%	0%	1.4%	1.4%	
319	0%	5%	2%	0%	0%	0%	1%	1%	0%	2%	3%	2%	3%	0%	0%	1.2%		1.2%
320	0%	5%	0%	0%	4%	3%	8%	3%	2%	2%	5%	7%	0%	20%	14%	4.9%	4.9%	
321	0%	3%	0%	1%	0%	0%	0%	2%	0%	12%	7%	0%	0%	4%	0%	1.9%	1.9%	
322	0%	0%	2%	0%	0%	1%	2%	2%	0%	0%	1%	0%	0%	0%	0%	0.5%		0.5%
323	0%	0%	0%	7%	0%	4%	0%	0%	2%	0%	0%	2%	5%	0%	0%	1.4%	1.4%	
325	0%	0%	6%	22%	4%	0%	6%	9%	8%	0%	9%	8%	0%	8%	5%	5.7%	5.7%	
345	4%	5%	0%	8%	2%	4%	8%	5%	10%	16%	9%	0%	0%	3%	0%	5.0%	5.0%	
346	0%	0%	0%	1%	0%	0%	0%	2%	10%	9%	0%	3%	0%	2%	0%	1.8%	1.8%	
427	0%	0%	8%	1%	3%	12%	9%	5%	3%	3%	8%	0%	0%	0%	0%	3.5%	3.5%	
428	0%	0%	0%	4%	0%	0%	2%	0%	0%	7%	14%	0%	0%	0%	0%	1.8%	1.8%	
429	0%	3%	4%	9%	0%	6%	2%	0%	5%	0%	0%	0%	0%	0%	0%	1.9%	1.9%	
430	0%	0%	3%	0%	0%	0%	0%	0%	7%	0%	5%	3%	0%	0%	0%	1.1%		1.1%
431	0%	0%	0%	3%	0%	0%	2%	1%	2%	1%	0%	2%	0%	9%	6%	1.7%	1.7%	
432	0%	0%	5%	5%	0%	22%	2%	2%	0%	1%	0%	0%	5%	0%	0%	2.8%	2.8%	
433	0%	0%	0%	2%	7%	2%	6%	2%	0%	1%	3%	10%	13%	0%	0%	3.1%	3.1%	
447	0%	4%	2%	0%	0%	2%	0%	2%	0%	1%	0%	5%	0%	0%	0%	1.1%		1.1%
534	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	5%	0%	0%	0%	0.6%		0.6%
535	13%	26%	31%	0%	25%	11%	24%	13%	0%	4%	1%	9%	0%	3%	4%	11.1%	11.1%	
736	0%	7%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0.9%		0.9%
750	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0.2%		
751	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	2%	0%	4%	13%	1.3%	1.3%	
752	0%	0%	0%	0%	0%	0%	1%	1%	2%	0%	0%	0%	0%	0%	0%	0.3%		0.3%
760	0%	0%	0%	0%	0%	0%	0%	3%	0%	1%	0%	0%	0%	0%	0%	0.3%		
761	0%	10%	2%	2%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	14%	2.1%	2.1%	
762	0%	3%	0%	4%	7%	0%	2%	0%	0%	0%	3%	8%	6%	0%	4%	2.5%	2.5%	
837	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	2%	0%	0%	7%	0.6%		0.6%
853	6%	0%	0%	2%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	1.6%	1.6%	
863	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%		
864	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0.0%		
865	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	0.2%		
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100.0%	89.9%	8.9%