Cruise Report

Spiny Dogfish Satellite Tagging, Yakutat Bay
July 19-22, 2010

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Tyler Smith (Andrews-Cooper, volunteer)

The spiny dogfish satellite tagging cruise took place on the chartered sport fishing vessel *Seawolf* in Yakutat Bay, Alaska from July 19-22, 2010. The goal of the cruise was to attach to spiny dogfish 20 pop-off satellite tags (Microwave Telemetry X-Tags) and as many numerical Peterson disk tags as possible. A total of 224 spiny dogfish were caught in 3 days of fishing (July 20-22), with 58 rod hours. Total catch-per-unit-effort (CPUE) equaled 3.9 dogfish per rod hour. Previous sport fishing surveys in the same area had CPUE equal to 1.8 (August 2009), 2.3 (July 2004), 0.4 (May 2005) and 3.0 (September 2005). Spiny dogfish caught ranged from 61 cm pre-caudal length (PCL) to 91 cm PCL with 9 males and 215 females. All 20 X-Tags were successfully deployed and 204 numerical tags were deployed. Table 1 includes a summary of all spiny dogfish tags deployed in Yakutat Bay from 2004 to present.

Three stations were fished near the mouth of Yakutat Bay (Figure 1). Bottom fishing gear was used. Four rods were fished with a 16/0 circle hook baited with herring. Most spiny dogfish were caught at or near the bottom, however a few were caught at the surface with a dip net as they followed hooked spiny dogfish to the surface. The first day we fished at 59.54 N by 139.89 W and 59.54 N by 139.95 W in 24 m and 30 m of water for 1 and 1.5 hours, respectively. After filling the live tanks we moved to protected areas (59.56 N by 139.82 W and 59.54 N by 139.89 W) with calmer water for the tag and release operations. Fishing continued while we were tagging. We deployed 20 X-tags all on females from 70 - 90 cm PCL and 30 numeric tags on females from 62 - 85 cm PCL. The second day we fished at 59.54 N by 139.89 W in 22 m of water for 1 hour. We again moved to a calmer area to continue fishing and do the tag and release operations, 59.60 N by 139.76 W. We deployed 6 numeric tags on males from 62 – 69 cm PCL and 8 females from 65 - 81.5 cm PCL and 27 numeric tags on 7 males from 59.5 - 71 cm PCL and 97 females from 63-86 cm PCL. The third day we fished at 59.60 N by 139.79 W in 23 m of water for 3.7 hours. We deployed 71 numeric tags on 3 males from 67 - 69 cm PCL and 68 females from 62 - 91 cm PCL. Tagged fish were released at the capture site on day 3.

Satellite tags were attached with a method developed by J. Sulikowski of the University of New England. A hole was drilled through the anterior dorsal fin spine below but near the point where the spine extrudes from the skin. A piece of 300lb test mono was looped

through the hole, pulled tight and clamped. The tag was attached to the mono with a loose loop which allowed the tag to swing freely. The mono was covered in a nalgene sleeve to prevent it from snagging or the clamps from irritating the skin of the dogfish (Figure 2). Peterson disk tags were attached to both sides of the dorsal fin with titanium pins following the methods of McFarlane and King, 2003 (Figure 3).

We were able to record maturity on all males and on some of the females. Below is a table explaining the maturity stages we used to classify spiny dogfish (Table 2). Female maturity was generally recorded as 5 ("unsure"), but some animals were clearly too small to be mature and were recorded as 1. Notes were taken if the size of the female suggested maturity, but could not be confirmed without dissection. A new code was added to the maturity table this year, 7="mature, pregnancy state unknown". This was added for females that are very large and robust, giving strong indication of maturity, but the status of pregnancies could not be confirmed. In the future we would like to use ultrasound to confirm maturity of females and if pregnant, the stage of pregnancy.

Table 1. Summary of tags and tag types deployed on spiny dogfish in Yakutat Bay since 2004, with recoveries to date. See D. Courtney cruise reports for 2004 and 2005 survey details.

Year	Archival		Numeric		Satellite	
	Deployed	Recovered	Deployed	Recovered	Deployed	Recovered*
2004	37	1	22	0	0	
2005 (longline)	63	0	595	0	1	1
2009	0	0	80	0	15	4
2010	0	0	204	0	20	0
Total	100	1	901	0	36	5

*Data recovered, but not the actual tag

Table 2. Maturity codes.

Code	Classification
1	Immature
2	Maturing
3	Mature-pregnant (females only)
4	Mature-not pregnant
5	Unsure
6	Ultrasound inconclusive
7	Mature-pregnancy unknown

Table 3. Satellite tags deployed.

Station	Tag Type	Tag No	Deploy Date
1	X-Tag	53666	20100720
1	X-Tag	53667	20100720
1	X-Tag	53668	20100720
1	X-Tag	53669	20100720
1	X-Tag	53670	20100720
1	X-Tag	53671	20100720
1	X-Tag	53674	20100720
1	X-Tag	53676	20100720
1	X-Tag	53680	20100720
1	X-Tag	53681	20100720
1	X-Tag	53682	20100720
1	X-Tag	53683	20100720
1	X-Tag	53685	20100720
1	X-Tag	53686	20100720
1	X-Tag	53687	20100720
1	X-Tag	53689	20100720
1	X-Tag	53690	20100720
1	X-Tag	53691	20100720
1	X-Tag	53693	20100720
1	X-Tag	53694	20100720

Table 3. Peterson Disk tags deployed

Station	Tag Type	Tag 1 No	Tag 2 No	Deploy Date	Station	Tag Type	Tag 1 No	Tag 2 No	Deploy Date
4	PD	24	29	20100720	6	PD	714	715	20100721
4	PD	26	128	20100720	6	PD	716	717	20100721
4	PD	28	166	20100720	6	PD	718	719	20100721
4	PD	31	48	20100720	6	PD	720	721	20100721
4	PD	35	98	20100720	6	PD	722	723	20100721
4	PD	36	85	20100720	6	PD	724	725	20100721
4	PD	39	82	20100720	6	PD	726	727	20100721
4	PD	42	95	20100720	6	PD	728	729	20100721
4	PD	49	50	20100720	6	PD	730	731	20100721
4	PD	52	38	20100720	6	PD	732	733	20100721
4	PD	54	100	20100720	6	PD	734	735	20100721
4	PD	55	89	20100720	6	PD	736	737	20100721
4	PD	58	87	20100720	6	PD	738	739	20100721
4	PD	62	83	20100720	6	PD	740	741	20100721
4	PD	64	43	20100720	6	PD	742	743	20100721
4	PD	67	93	20100720	6	PD	744	745	20100721
4	PD	70	68	20100720	6	PD	746	747	20100721
4	PD	72	86	20100720	6	PD	748	749	20100721
4	PD	74	41	20100720	6	PD	750	751	20100721
4	PD	78	32	20100720	6	PD	752	753	20100721
4	PD	79	51	20100720	6	PD	754	755	20100721
2	PD	84	88	20100720	6	PD	756	757	20100721
2	PD	91	46	20100720	6	PD	758	759	20100721
2	PD	94	81	20100720	6	PD	902	705	20100721
2	PD	149	152	20100720	6	PD	903	904	20100721
2	PD	151	148	20100720	6	PD	905	906	20100721
2	PD	191	175	20100720	6	PD	907	908	20100721
2	PD	192	162	20100720	6	PD	909	910	20100721
2	PD	200	92	20100720	6	PD	911	912	20100721
2	PD	61	79	20100720	6	PD	913	914	20100721
6	PD	37	136	20100721	6	PD	915	916	20100721
6	PD	47	27	20100721	6	PD	917	918	20100721
6	PD	56	23	20100721	6	PD	919	920	20100721
6	PD	80	155	20100721	6	PD	921	922	20100721
6	PD	138	151	20100721	6	PD	923	924	20100721
6	PD	139	164	20100721	6	PD	925	926	20100721
6	PD	142	181	20100721	6	PD	927	928	20100721
6	PD	145	193	20100721	6	PD	929	930	20100721
6	PD	147	150	20100721	6	PD	931	932	20100721
6	PD	150	152	20100721	6	PD	933	934	20100721
6	PD	153	140	20100721	6	PD	935	936	20100721
6	PD	156	25	20100721	6	PD	937	938	20100721
6	PD	163	192	20100721	6	PD	939	940	20100721
6	PD	165	37	20100721	6	PD	941	942	20100721
6	PD	168	75	20100721	6	PD	943	944	20100721
6	PD	171	66	20100721	6	PD	945	946	20100721
6	PD	172	99	20100721	6	PD	947	948	20100721
6	PD	173	176	20100721	6	PD	949	950	20100721
6	PD	174	146	20100721	6	PD	951	952	20100721
6	PD	178	162	20100721	6	PD	953	954	20100721
6	PD	179	76	20100721	6	PD	955	956	20100721
6	PD	179	198	20100721	6	PD	957	958	20100721
6	PD	193	154	20100721	6	PD	959	960	20100721
6	PD	194	129	20100721	6	PD	961	962	20100721
6	PD	194	163	20100721	6	PD	963	964	20100721
6	PD	195	44	20100721	6	PD	965	966	20100721
6	PD	196	141	20100721	6	PD	967	968	20100721
6	PD	197	53	20100721	6	PD	969	970	20100721
6	PD	710	711	20100721	6	PD	971	972	20100721
6	PD	712	713	20100721	6	PD	973	974	20100721

Table 3 (cont'd). Peterson Disk tags deployed

Station	Tag Type	Tag 1 No	Tag 2 No	Deploy Date	Station	Tag Type	Tag 1 No	Tag 2 No	Deploy Date
6	PD	975	976	20100721	7	PD	496	495	20100722
6	PD	977	978	20100721	7	PD	498	497	20100722
6	PD	979	980	20100721	7	PD	500	499	20100722
6	PD	981	982	20100721	7	PD	762	761	20100722
6	PD	983	984	20100721	7	PD	763	760	20100722
6	PD	985	986	20100721	7	PD	764	765	20100722
6	PD	987	988	20100721	7	PD	766	767	20100722
6	PD	989	990	20100721	7	PD	768	769	20100722
6	PD	991	992	20100721	7	PD	770	771	20100722
6	PD	993	994	20100721	7	PD	772	773	20100722
6	PD	995	996	20100721	7	PD	774	775	20100722
6	PD	997	998	20100721	7	PD	776	777	20100722
6	PD	999	1000	20100721	7	PD	778	779	20100722
7	PD	402	401	20100722	7	PD	780	781	20100722
7	PD	404	403	20100722	7	PD	782	783	20100722
7	PD	406	405	20100722	7	PD	784	785	20100722
7	PD	408	407	20100722	7	PD	786	787	20100722
7	PD	410	409	20100722	7	PD	788	789	20100722
7	PD	412	411	20100722	7	PD	790	791	20100722
7	PD	414	413	20100722	7	PD	792	793	20100722
7	PD	416	415	20100722	7	PD	794	795	20100722
7	PD	418	417	20100722	7	PD	796	797	20100722
7	PD	420	419	20100722	7	PD	798	799	20100722
7	PD	422	421	20100722	7	PD	800	701	20100722
7	PD	424	423	20100722					
7	PD	426	425	20100722					
7	PD	428	427	20100722					
7	PD	430	429	20100722					
7	PD	432	431	20100722					
7	PD	434	433	20100722					
7	PD	436	435	20100722					
7	PD	438	437	20100722					
7	PD	440	439	20100722					
7	PD	442	441	20100722					
7	PD	444	443	20100722					
7	PD	446	445	20100722					
7	PD	448	447	20100722					
7	PD	450	449	20100722					
7	PD	452	451	20100722					
7	PD	454	453	20100722					
7	PD	456	455	20100722					
7	PD	458	457	20100722					
7	PD	460	459	20100722					
7	PD	462	461	20100722					
7	PD	464	463	20100722					
7	PD	466	465	20100722					
7	PD	468	467	20100722					
7	PD	470	469	20100722					
7	PD	472	471	20100722					
7	PD	474	473	20100722					
7	PD	476	475	20100722					
7	PD	478	477	20100722					
7	PD	480	479	20100722					
7	PD	482	481	20100722					
7	PD	484	483	20100722					
7	PD	486	485	20100722					
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7	PD	490	489	20100722					
7	PD	492	491	20100722					
7	PD	494	493	20100722					

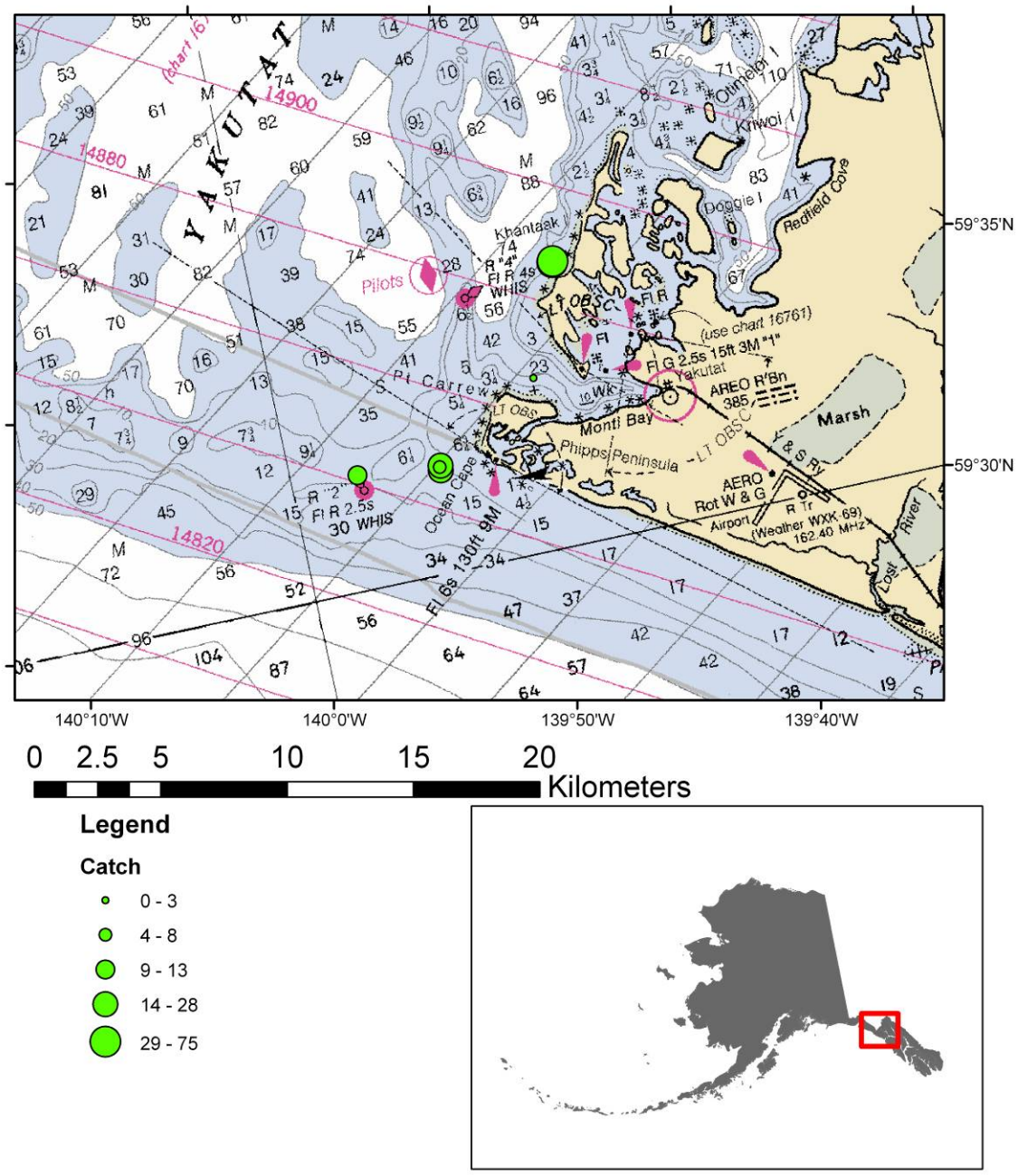

Figure 1. Map of capture and release locations for this survey.

Figure 2. Spiny dogfish with attached X-tag in recovery tank.

Figure 3. Spiny dogfish with Peterson disk tag (numeric).

Photo: Katy and Kendra placing numerical tags on a spiny dogfish.

Photo: Dog meets dogfish.

Photo: Captain Scott and Katie with the first spiny dogfish of the trip.

Photo: “Sharkies Angels” team, photo courtesy of Nicole Zeiser