residuals for GC fit by T3 were used. In all cases, forward stepwise model selection was used to identify the best model in our GLM analyses, based on Akaike's Information Criterion (AIC).

Raw Data are provided in S1 Appendix.

3. Results

In total, there were 348 samples from known (genotyped) individuals, in the final analytic dataset representing 79 unique whales (Supplemental Information-raw data), including 11 successful and 24 unsuccessful pregnancies (Table 2). Each year included a representative sampling by pod, sex and reproductive class.

3.1 Changes in fish abundance, vessel density, T3 and GC concentrations over time

Based on delta AIC, the Albion Test Fishery Abundance of FRC, measured in CPUE, was best predicted by a 4th order polynomial using Julian date (i.e., consecutive day of the year, $P < 0.0001$) across years (Fig 1A), with a peak in CPUE at day 228 (Aug 16). CPUE significantly declined across years, when examined as a continuous variable ($P < 0.0001$). The lowest FRC CPUE occurred in 2013, followed by 2012 (for both, $p < 0.0001$ compared to all prior years, and $p < 0.004$ compared to 2014) and then 2014 ($p < 0.04$ compared to 2008–2011) (see also S1 Fig). Vessel density was similarly predicted by a 4th order polynomial using Julian date ($p < 0.0001$) with a peak at day 222 (Fig 1B). Vessel density significantly increased across years, when examined as a continuous variable ($P < 0.0001$).

We next separately predicted T3 and GC concentrations based on Julian date (Fig 1C and 1D, respectively), given the close association of Julian date with both fish and vessel abundance. Spring Columbia River Chinook (CRC) abundance was also included as a covariate in these analyses since the relatively slow responding T3 was hypothesized to still be influenced by spring CRC abundance at the time of SRKW early summer arrival in the Salish Sea. T3 concentration was best predicted by a 5th order polynomial of Julian date ($p < 0.0001$) and was also positively correlated with CRC ($p < 0.0001$). For all years of study, T3 was at its peak

Table 2. Pod composition and samples per unique successful and unsuccessful pregnancy from genotyped females per year.

	SRKW Pod			Reproductive Age Class				Unsuccessful Pregnancy[+]: unique whales/ total samples		Confirmed pregnancies[+][*]: unique whales/ total samples	
Year	J	K	L	Juvenile	RM	RF	PRF	Low T	High T	Low T	High T
2008	13	5	7	7	6	7	5	0/0	0/0	1/1	1/1
2009	24	10	14	9	18	13	8	1/2	2/2	0/0	1/2
2010	14	6	12	3	6	13	10	1/1	0/0	1/2	1/1
2011	25	17	23	15	16	24	10	0/0	3/4	2/2	1/1
2012	32	11	8	6	13	24	8	5[#]/9	1[#]/2	0/0	0/0
2013	17	7	21	6	12	23	4	4[†]/4	1[†]/1	0/0	0/0
2014	36	18	6	19	10	27	4	5/6	1/1	1/4	2/2

RM = reproductive male, RF = reproductive female, PRF = Post-reproductive female.

*Not all samples between years are unique pregnancies

[†] Includes 2 samples from one pregnancy, one with Low T and one with High T

[+] Includes only samples from females with P4 concentrations $\geq$ 2000 ng/g

[#] Observed birth, reclassified at unsuccessful due to early perinatal mortality

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