

Going with the Flow

Using the Currents to Save Time and Fuel

June, 2010 Current Atlas Tables

Hours	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1 Tue	39	40	41	16	17	19	20	22	23	24	25	26	27	28	29	2	
2 Wed	39	39	40	41	16	17	19	20	21	31	32	32	33	34	35	1	
3 Thu	32	32	33	34	35	36	17	19	20	37	38	39	39	40	41	1	
4 Fri	31	32	32	33	34	35	16	17	19	20	37	38	39	39	40	41	
5 Sat	31	31	32	33	34	34	35	16	17	18	19	20	37	38	39	40	
6 Sun	30	31	32	33	33	34	35	9	10	11	11	12	13	14	15	38	
7 Mon	22	23	24	25	25	26	27	28	29	10	11	11	12	13	14	37	
8 Tue	20	22	23	24	25	25	26	27	28	1	2	3	4	5	6	7	
9 Wed	20	22	23	24	25	25	26	27	28	1	2	3	4	4	5	6	
10 Thu	19	20	21	23	24	25	25	26	27	28	1	2	3	4	4	5	
11 Fri	18	19	20	22	23	24	25	25	26	27	28	29	2	3	4	5	
12 Sat	17	18	19	20	22	23	24	25	26	27	28	29	2	3	4	4	
13 Sun	16	17	19	20	22	23	24	25	25	26	27	28	1	2	3	4	
14 Mon	41	16	17	19	20	21	23	24	25	25	26	27	28	1	2	3	
15 Tue	40	41	42	17	19	20	22	23	24	25	26	27	28	1	2	3	
16 Wed	33	34	35	16	17	19	20	22	23	24	25	26	27	28	29	2	
17 Thu	33	33	34	35	16	17	19	20	21	23	24	25	26	27	28	1	
18 Fri	32	32	33	34	35	36	17	18	19	20	30	31	32	33	34	35	
19 Sat	23	24	25	26	27	28	9	10	11	13	14	15	38	39	39	40	
20 Sun	23	24	25	25	26	27	28	9	10	11	12	13	14	14	37	38	39
21 Mon	22	23	24	25	25	26	27	28	29	2	3	4	5	6	7	37	
22 Tue	20	22	23	24	25	26	27	28	29	2	3	4	4	5	6	7	
23 Wed	20	22	23	24	25	25	26	27	28	1	2	3	4	4	5	6	
24 Thu	19	20	21	23	24	25	25	26	27	28	1	2	3	4	4	5	
25 Fri	17	19	20	22	23	24	25	25	26	27	28	29	2	3	4	5	

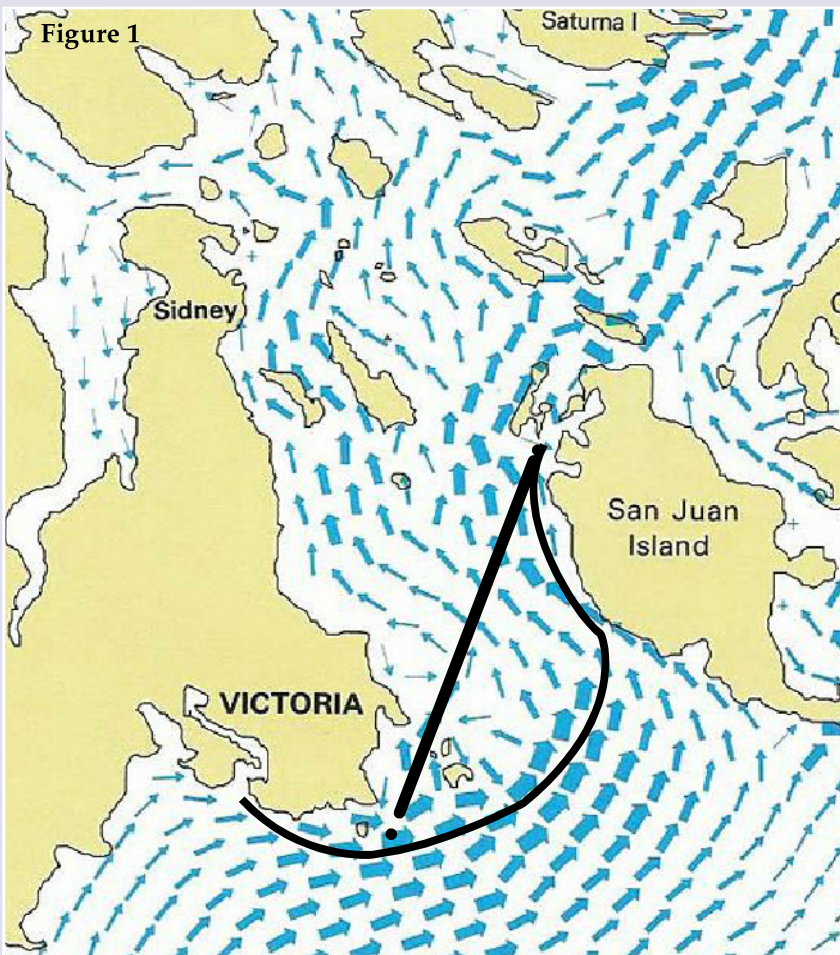
This last June my wife and I were in Victoria sitting in the cockpit enjoying the sights and sounds of the city (not a difficult task). We were also planning our travels for the next day; we were headed to Sucia via Roche Harbor to clear customs. My wife asked, "What are the currents doing tomorrow - when do we need to leave?" I said, "I'll get the books" and ran below to get the Ports and Passes and Current Atlas. The next day was the 24th of June so we looked up the currents in Ports and Passes for the east end of the Juan de Fuca Strait; here is the listing:

23 Wed	11:16a 5:42p	8:42a 2:11p 8:32p	-2.9 +1.7 -1.1	(the first column is the time of slack, the second is the time of maximum current and the third is the speed of that maximum; positive for a flood and negative for an ebb)
24 Thu	11:49a 6:34p	1:12a 7:32a 2:48p 9:24p	-0.4 -2.9 +2.0 -1.2	
25 Fri	12:25p 7:17p	2:10a 8:23a 3:26p 10:01p	-0.4 -2.9 +2.2 -1.3	

The flood current flows from Victoria toward Roche Harbor so we decided to leave the dock on the slack before the flood; or around noon. Admittedly, this timing was welcome as we had started very early that morning to get to Victoria so the chance to sleep in was appreciated.

The next question was what route we should take? There were two possible routes; one where we would cut inside Discovery Island, through Baynes Channel, and then head for Roche Harbor (dotted line). The other route would have us head east, staying south of Discovery Island and then run up along San Juan Island (solid line). The first option would be shorter but would it be the fastest? To answer this question we opened the Current Atlas and the accompanying annual tables. The listing for the 24th is shown below, the first row is the time (military) and the second row shows which chart corresponds to that time.

We figured it would take about an hour to reach Discovery Island so we looked at 13:00, which indicated chart 3. Then we added another 1-2 hours to see what our crossing would look like, 14:00 and 15:00 indicated charts 4. Charts 3 and 4 both indicated a strong flood current. Figure 1 shows the relevant portion of chart 3.



The larger the arrows, the faster the current – the biggest ones are for currents greater than 2.5 knots. We decided to ride the faster currents outside Discovery Island over to San Juan Island where we would turn north and head for Roche Harbor.

In practice, this route worked very well. There was no wind that day so we were motoring at 7.6 knots. However, by the time we were south of Trial Island we were making 12 knots over ground and stayed at that speed until we got close to San Juan Island, where we slowed to around 10 knots. At these speeds, the trip from Victoria to Roche took about 3 hours. If we had departed at 8 AM I believe it would have taken over 5 hours.

Ideas and facts that may help you go with the flow:

Tide and Current Basics – Tides are the main driving force of currents. However, they do not go in lock step. For example, slack current seldom happens at the same time as high or low tide; slack frequently happens an hour or more before or after the tide has changed. In this part of the world,

there are generally two low tides and two high tides each day with one set having larger swings than the other. A complete cycle takes, on average, about 25 hours. Therefore, the highest (or lowest) tide happens about an hour later each day. The largest tides, and therefore the strongest currents, occur around the new and full moon.

Have Reference Books and Know How to Use Them – Due to the fact that tides and currents are not on exactly the same schedule it is a good idea to have both tide and current tables. NOAA publishes them separately but books like Ports and Passes merge them into one. As mentioned earlier, if you boat in the San Juan or Gulf Islands the Canadian Current Atlas can be very handy. Additionally, cruising guides, such as Waggoner, will frequently provide helpful local knowledge for getting through tight spots such as rapids or other areas with strong current.

Plan Ahead and Be Flexible – Since the currents usually switch direction every 5-7 hours, waiting until they are going your way can have a big impact. Here is a typical example: if your boat can

cruise at 6 knots and you are fighting a 2 knot current you will be making 4 knots over ground. However, if you were going with that same current you would be making 8 knots over ground – twice the speed as against the current. The point is this, if you have the luxury of leaving earlier or later and can catch a favorable current it can make a big difference.

Know the Waters – The currents in the San Juan Islands generally flow north and east on a flood and south and west on an ebb. From Port Townsend to Olympia floods generally go south and ebbs go north. If you are in Canadian waters inside Vancouver Island floods go around the island and meet in the middle; i.e. north from Sidney to about Comox and south from Port Hardy to Comox. Obviously, these are very general so when you get into channels or in between islands the directions are likely to change. By paying attention to currents in your local area you can put that knowledge to use in subsequent trips.

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