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#### INTRODUCTION

This document is a summary of the humpback whale calfs that we (Tony Wu and Takaji Ochi) encountered during August and September 2009 in the Vava'u island group in the Kingdom of Tonga. This is the second document we have compiled to record our calf sightings. Our summary for 2008 is available via this link.

The purpose of this document is to provide a record and reference for ourselves for future whale seasons in Tonga, and also to share this information with anyone else who takes an interest in humpback whales.

During our stay in Tonga this year (08 August to 11 September), we identified 26 calfs. We recorded an additional 24 sightings of calfs we were unable to identify.

Subsequent to our departure, we received photos from friends (Alexis and Nathalie, Carol, Karen, Nonie) bringing the total ID count to 30. We hope that we will receive additional images over the coming months that will augment the calf count, as well as provide repeat sightings of calfs we have already identified in this document. We will update this file as additional information comes in.

We would like to thank all of our friends (both those living in Tonga and our co-travellers), who helped us with finding and identifying these calfs. It's a lot of work, and we relied on help from many people.

All of this work has been and is being done on our own time, with our own resources. We are not receiving financial or other assistance, and we are not affiliated with any person or organisation involved with cetaceans.

#### **METHODOLOGY**

- 1. We recorded GPS locations for all sightings of humpback whale calfs, upon initial visual and/ or radio confirmation that a calf was in the water.
- 2. Where possible, we entered the water to photograph calfs with their mothers and other associated whales if any.
- 3. When we were able to take photographs of sufficient quality and quantity to establish an ID, we named the calf for ease of future reference.
- 4. In those cases where we were unable to get photographs, we did not name the calfs and recorded the sightings as unidentified calfs.
- 5. We have uploaded all the GPS data to Google Maps, where the locations of all ID-ed calfs and unidentified calfs is available for viewing.

### **OBSERVATIONS**

There were a lot of calfs this year. During our stay, we were able to establish photo IDs for 26 calfs during 59 boat-days on the water, meaning **0.44** calfs/ boat-day (a boat-day being defined as a single day of approximately six hours on the water on a boat looking for whales). This compares with 14 calfs in the Vava'u area we identified in 2008 during 66 boat days, or **0.21** calfs/ boat-day. In 2007 (when we did not document the calfs as rigorously as in 2008 and 2009), we believe we saw 13-14 unique calfs. This was over a period of 53 boat-days, equating to about **0.26** calfs/ boat-day. The dates of our stays in Vava'u occurred at approximately the same time of year in all three years. (**Note**: These figures exclude data contributed by other people.)



Figure 1: ID-ed Calfs/ Boat-day

- 2) This year, we also kept records of calfs that we sighted, but for which we were unable to establish photo IDs. We had 24 such sightings during our stay. There is no doubt a reasonably high probability that some of those sightings are of calfs already identified in this document. We believe, however, that many of the 24 are additional calfs not contained in this summary.
- 3) We recorded our sightings with GPS, and uploaded our GPS data to Google Maps (click to see sighting locations of ID-ed calfs and unidentified calfs). We used Garmin GPS 60 handheld units for marking GPS locations and converted to Google KML format.
- 4) One thing that becomes immediately apparent from the GPS data is that mother/ calf pairs are making full use of the topography of Vava'u. We found calfs in every area accessible to us by boat, from the shallow areas to the east/ south dominated by reefs and small islands, through the inner channels between the islands, and out into the open ocean to the west and north. In other words, there does not appear to be any clustering or preference for any one specific area.

- 5) Related to this point is that many of our encounters were with mother and calf pairs that were going some place...heading south, heading north, coming in from the west, making a beeline east, coming down from the north, etc. In other words, the picture painted by the GPS data points coupled with our own observations of the whales' behaviour tends to support our observation last year that Vava'u is a transit area for calfs and associated whales (discussed further in point 11 below).
- 6) We also noted the sex of the calfs where possible. Of the calfs on our ID list in Table 1, we were able to identify 10 as female and 8 as male (13 female and 9 male counting calfs other people IDed).
- 7) The photographs contained in this document represent a small fraction of the images we collected. In most cases, we have many more images available for ID purposes.
- 8) In last year's summary, we noted that calf sightings seemed to come in clusters, with down-time in between sightings, based upon the timeline on page 5 of our 2008 summary. There does not, however, seem to be any such clustering in this year's data. Figures 2, 3 and 4 below, which set out timelines of all our calf sightings, show a continuous flow of calf sightings covering nearly every day of our stay in Tonga this season. In fact, there was only one day (09 August) during out stay that we were out on the water and did not see a calf (see Figure 4). It is possible that the apparent clustering effect in 2008 was due to a relatively smaller number of calfs, as well as to the fact that we did not record calf sightings for which we were unable to establish photo IDs in 2008. We also lost 7 days to rain/ bad weather in 2008.
- 9) As with our procedure in 2008, we have compared the timeline of our calf sightings with the phases of the moon this year. There seems to be no apparent correlation.
- 10) We noted once again that on several occasions, we found mother/ calf pairs in close proximity to one another, with two to four such pairs being within visual distance of one another on some occasions.
- 11) Also consistent with our observations last year is that the Vava'u area appears to be a stopping off/ transit point for baby whales. The longest interim between sightings of a single calf was 23 days for Stitches (calf #4/ 2009). The next longest was 13 days for Luna (calf #13/ 2009). Of course, we are not able to find and record locations for every calf, but over a total of 125 boatdays during 2008 and 2009 in the limited area around Vava'u, we have only had a handful of long-term repeat sightings.
- 12) The weather was extremely windy during the entire duration of our stay. We noted last season that the conditions were the windiest we had experienced to that point. The 2009 conditions were more challenging. We speculate that the prevailing El Niño conditions may have something to do with this, as well as with the generally poor underwater visibility this season.
- 13) We documented the return of two mothers from the 2008 season, the mothers of Scratches (calf #1/ 2008) and Chibi-chan (calf #16/ 2008) last year. These two females returned with new babies this season, which we named Stitches (calf #4/ 2009) and Floppy (calf #29/ 2009). The mother of Stitches is easily recognisable by her unique fluke. The mother of Floppy has a distinct body pattern. We have no way of determining what happened to the two calfs from 2008.

# TABLE 1: HUMPBACK WHALE CALF IDENTIFICATIONS VAVA'U, KINGDOM OF TONGA (AUG-SEPT 2009)

#	NAME		DATES/ LOCATIONS SIGHTED
1	Mellow	♂	08 Aug, inside Hunga channel
2	Speedy		13 Aug, near Matamaka
3	Pasta	우	14 Aug, North Bay
4	Stitches	아	18 Aug, 19 Aug, and 20 Aug between Sisia and Euakafa.  Alexis/ Nathalie spotted Stitches 09 Sep at top of Hunga, with escort
5	Jaws		21 Aug, east from Taunga and Eueiki
6	Curious George	우	21 Aug, east of Taunga and Kapa
7	White Patch	우	24 Aug, Blue Lagoon area to Luamoko
8	Blackberry	∛	25 Aug, near Luahiapo; 27 Aug, outside Hunga; 02 Sep, inside Hunga channel
9	Sneakers		25 Aug, really far south
10	Genki	우	26 Aug, bottom of Hunga channel
11	Hachi	₹	27 Aug, outside Hunga, heading in toward islands from the west
12	Ziggy	δ	28 Aug, near Taunga
13	Luna	δ	30 Aug, near Euakafa; 01 Sep, south of Ovaka; 11 Sep (Alexis/ Nathalie), outside Hunga
14	Vanilla	♂	31 Aug, initially near Tungasika, moving toward North Bay
15	Sesame		01 Sep, near Ovaka
16	Bubbles		02 Sep, outside Fofoa
17	Gelato	우	03 Sep, half way to Fatumanga from Hunga channel
18	Dialga		03 Sep, south of Sisia; 04 Sep, south of Kapa; 05 Sep, south of Kapa
19	Palkia		03 Sep, inside Hunga channel
20	Mama's Boy		04 Sep, near main entrance to harbour, behind Tungasika

# TABLE 1: HUMPBACK WHALE CALF IDENTIFICATIONS VAVA'U, KINGDOM OF TONGA (AUG-OCT 2009)

#	NAME		DATES/ LOCATIONS SIGHTED
21	Full Moon	우	05 Sep, North Bay; 06 Sep, inside Hunga channel
22	Mei Mei	우	06 Sep, North Bay; 09 Sept, North Bay
23	Daruma	우	08 Sep, North Bay
24	lka	δ	07 Sep, outside Hunga (Alexis/ Nathalie); 08 Sep, outside White Patch/ North Bay area
25	Noah	♂	09 Sep, North Bay; 10 Sep, North Bay
26	Nofo	우	11 Sep, North Bay
27	Twist (Alexis/ Nathalie)	δ	13 Sep, north of Mounu; 14 Sep, south of Langito'o; 15 Sep, between Mounu, Sisia and Euakafa
28	Happy (Carol)	우	06 Sep, near Fonua'one'one and Fangasito
29	Floppy (Karen, Nonie)	우	02 Oct, near Taunga (Nonie); 03 Oct, near White Patch toward North Bay (Karen)
30	Kiran (Nonie)	우	07 Oct, near Luahiapo, settling near Ovaka

# FIGURE 2: HUMPBACK WHALE CALF IDENTIFICATIONS VAVA'U, KINGDOM OF TONGA (AUG-OCT 2009)

06 Aug: Full Moon	08 Aug: Mellow	Black = Tony/ Takaji/ Emiko Blue = Alexis/ Nathalie Green = Carol Brown = Karen Pink = Nonie
	13 Aug: Speedy 14 Aug: Pasta	
20 Aug: New Moon	18 Aug: Stitches 19 Aug: Stitches 20 Aug: Stitches 21 Aug: Jaws, Curious George	
	<ul><li>24 Aug: White Patch</li><li>25 Aug: Sneakers</li><li>26 Aug: Genki</li><li>27 Aug: Hachi, Blackberry</li><li>28 Aug: Ziggy</li></ul>	
05 Sep: Full Moon	30 Aug: Luna 31 Aug: Vanilla 01 Sep: Luna, Sesame 02 Sep: Blackberry, Bubbles 03 Sep: Gelato, Dialga, Palkia 04 Sep: Mama's Boy 05 Sep: Full Moon, Dialga 06 Sep: Full Moon, Mei Mei, Happy 07 Sep: Ika 08 Sep: Ika, Daruma 09 Sep: Noah, Mei Mei, Stitches 10 Sep: Noah	
	11 Sep: Nofo, Luna  13 Sep: Twist 14 Sep: Twist 15 Sep: Twist	02 Oct: Floppy 03 Oct: Floppy 07 Oct: Kiran
'		

# TABLE 2: UNIDENTIFIED HUMPBACK WHALE CALFS VAVA'U, KINGDOM OF TONGA (AUG-SEPT 2009)

#	DATES/ LOCATIONS SIGHTED
1	08 Aug, near Kitu
2	11 Aug, in front of Blue Lagoon
3	12 Aug, near Submarine Rock
4	12 Aug, just north of Blue Lagoon
5	16 Aug, just off the top end of Kapa
6	18 Aug, Sisia to Ovaka
7	19 Aug, near Sisia
8	21 Aug, east of Fua'amotu
9	22 Aug, north of Mounu, south of Lape
10	23 Aug, North Bay
11	26 Aug, Hunga channel, inside Vaka Eitu
12	27 Aug, south of Ovaka
13	27 Aug, Vaka Eitu
14	28 Aug, between Kapa and Sisia
15	28 Aug, between Euakafa and Taunga
16	29 Aug, west from North Bay, out in open water
17	30 Aug, near Foelifuka, toward Submarine Rock
18	30 Aug, near Euakafa
19	01 Sep, south of Ovaka
20	02 Sep, west from entrance to harbour area, in open water
21	06 Sep, near Laufatu
22	08 Sep, near Luamoko
23	09 Sep, North Bay
24	11 Sep, White Patch

# FIGURE 3: UNIDENTIFIED HUMPBACK WHALE CALFS VAVA'U, KINGDOM OF TONGA (AUG-SEPT 2009)

06 Aug: Full Moon	
	08 Aug
	11 Aug
	12 Aug: two calfs
	40 Ave
	16 Aug
	18 Aug
20 Aug: New Moon	19 Aug
· ·	21 Aug
	22 Aug
	23 Aug
	26 Aug
	27 Aug: two calfs
	28 Aug: two calfs
	29 Aug
	30 Aug: two calfs
	01 Sep
	02 Sep
05 Sep: Full Moon	06 Sep
	08 Sep
	09 Sep
	11 Sep

# FIGURE 4: ALL HUMPBACK WHALE CALF SIGHTINGS VAVA'U, KINGDOM OF TONGA (AUG-OCT 2009)

06 Aug: Full Moon		Black = Tony/ Takaji/ Emiko
		Blue = Alexis/ Nathalie
	08 Aug: Mellow, calf	Green = Carol
	09 Aug: No calfs	Brown = Karen
	10 Aug: Did not go out on the water 11 Aug: calf	Pink = Nonie
	12 Aug: two calfs	Orange = Unidentified calfs
	13 Aug: Speedy	
	14 Aug: Pasta	
	15 Aug: Did not go out on the water	
	16 Aug: calf	
	17 Aug: Did not go out on the water	
	18 Aug: Stitches, calf	
	19 Aug: Stitches, calf	
20 Aug: New Moon	20 Aug: Stitches	
	21 Aug: Jaws, Curious George, calf	
	22 Aug: calf	
	23 Aug: calf	
	24 Aug: White Patch	
	25 Aug: Sneakers	
	26 Aug: Genki, calf	
	27 Aug: Hachi, Blackberry, two calfs	
	28 Aug: Ziggy, two calfs 29 Aug: calf	
	30 Aug: Luna, two calfs	
	31 Aug: Vanilla	
	01 Sep: Luna, Sesame, calf	
	02 Sep: Blackberry, Bubbles, calf	
	03 Sep: Gelato, Dialga, Palkia	
	04 Sep: Mama's Boy	
05 Sep: Full Moon	05 Sep: Full Moon, Dialga	
oo cop. i ali ivicon	06 Sep: Full Moon, Mei Mei, Happy, ca	alf
	07 Sep: Ika	
	08 Sep: Ika, Daruma, <mark>calf</mark>	
	09 Sep: Noah, Mei Mei, Stitches, calf	
	10 Sep: Noah	
	11 Sep: Nofo, Luna, calf	
		02 Oct: Floppy
	13 Sep: Twist	03 Oct: Floppy
	14 Sep: Twist	
	15 Sep: Twist	07.0 + 16
	4	07 Oct: Kiran

## 1. MELLOW ♂

We named this calf for its mellow temperament.

Calf: No particular distinguishing marks.

Mom: Primarily black body, white underside of fluke. Discoloured area on left pectoral dorsal surface easily identifiable.

When & Where: 08 Aug, inside Hunga channel.





© Emiko



#### Mom's dorsal fin









#### 2. SPEEDY

One brief encounter, accompanied by escort. One whale (probably escort) vocalised as the trio swam past.

**Calf:** White area on left side, mid-way between dorsal and fluke.

**Mom:** Black, leading white edge on pectoral, lots of white spots.

When & Where: 13 Aug, near Matamaka.







## 3. PASTA ♀

Young calf, relaxed mom.

**Calf:** Too young at time of sighting to have distinct markings,

except general shape of dorsal fin.

**Mom:** Mottled skin. White body patterns easy to recognise. White area on rear edge of dorsal fin (not visible in pictures here).

When & Where: 14 Aug, North Bay.



### 4. STITCHES♀

Stitches is the second calf we've seen with this female. (See Scratches in 2008 calf summary).

Calf: Whitish pectoral fins. Dark ventral area, white in middle.

**Mom:** Fluke easy to ID.

#### When & Where:

18 Aug, 19 Aug, and 20 Aug between Sisia and Euakafa. Alexis/ Nathalie spotted Stitches 9 Sept at top of Hunga.





### 5. JAWS

We named this calf because it opened its mouth while swimming.

Calf: No particular distinguishing marks, except a hooked dorsal.

Mom: Primarily black body, white lower ventral area easy to ID. Had a habit of resting tail-up both at the surface and at depth.

When & Where: 21 Aug, east from Taunga and Eueiki.





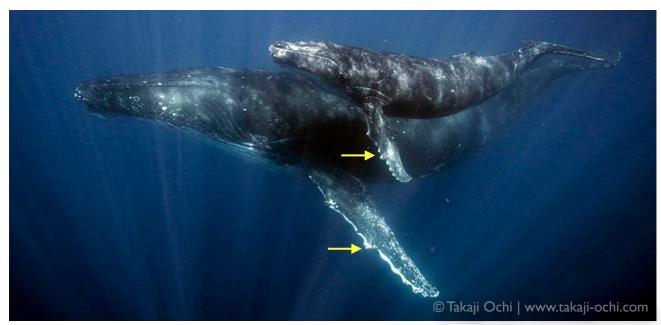
Calf's dorsal fin











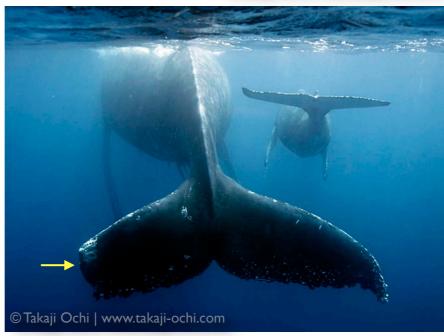
# 6. CURIOUS GEORGE

Calf highly inquisitive, but mother reserved.

Calf: White area on pectoral fins.

Mom: Left fluke partially missing, easy to ID.

# When & Where: 21 Aug, east of Taunga and Kapa.





# 7. WHITE PATCH ₽

Easy to ID this calf and mom.

Calf: White patches on both left and right sides. Dorsal fin squared off like mom's fin.

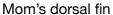
Mom: Battleship grey dorsal surface. Ventral area white with grey in middle. Dorsal fin squared off. White-edge right pectoral fin.

When & Where: 24 Aug, Blue Lagoon area to Luamoko.













## 8. BLACK-BERRY ♂

Three encounters with mom and calf, twice with an escort.

Calf: Whitish posterior area, somewhat stumpy dorsal fin.

Mom: All black except underside of fluke. Lots of white dots all over body. Squared off dorsal fin.

#### When & Where:

25 Aug, near Luahiapo;27 Aug, outside Hunga;02 Sep, inside Hungachannel.









Blackberry's mom's dorsal fin (left), Blackberry's dorsal fin (right)



### 9. SNEAKERS

Only one brief encounter with mom, baby and escort.

Calf: White are midtorso ventral area. Somewhat hooked dorsal. Discolouration on left pectoral fin.

Mom: Mostly dark body with minimal white ventral area. Band of white at the end of left pectoral fin.

When & Where: 25 Aug, really far south.



## 10. GENKI ♀

We named this calf for its incredible energy level. "Genki" means healthy/ full of energy in Japanese.

Calf: Extremely energetic, curious. Continuous breaching, tail-slapping.

**Mom:** White pattern on body easy to ID.

#### When & Where:

26 Aug, bottom of Hunga channel







## 11. HACHI

Calf took long time between breaths, was left behind often by mom and escort. Calf breached completely clear of water.

Calf: White areas on side of torso.

Mom: Notch in middle of fluke.

#### When & Where:

27 Aug, outside Hunga, heading in from the west.











### 12. ZIGGY ♂

Difficult to follow, as both mom and calf are dark. Named for tendency to swim in zigzag pattern.

**Calf:** Pattern of white dots. Small hole in right

fluke.

**Mom:** Mostly dark. Ventral and fluke patterns easiest to ID. When & Where: 28 Aug, near Taunga.

## 13. LUNA ♀

One of the easiest calfs to identify, based on mom's unique dorsal fin.

Calf: Whitish area around pectoral. Sharp dorsal fin. Mom: Nearly non-existent dorsal fin, with rune-like white markings.

#### When & Where:

30 Aug, near Euakafa; 01 Sep, south of Ovaka; 11 Sep (Alexis/ Nathalie), outside Hunga.









Luna's dorsal fin (left), Luna's mom's unique dorsal fin (right)





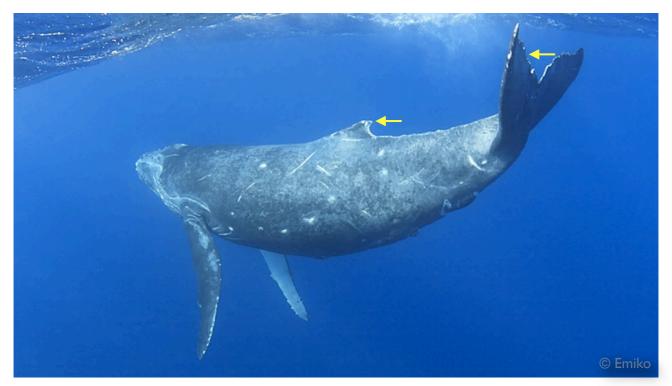
#### 14. VANILLA

Named for the delicious vanilla gelato Franco makes. We named calf #17 Gelato to complete the "vanilla gelato" reference.

Calf: White area under the chin.

**Mom:** Easy to distinguish white patches on torso.

When & Where: 31 Aug, initially near Tungasika then moving toward North Bay.





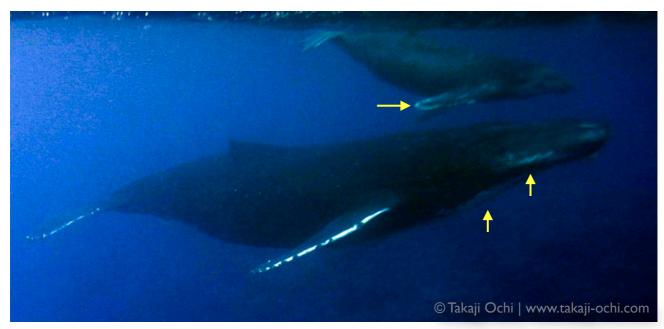
## 15. SESAME

One brief encounter. Both mom and baby dark all over.

**Calf:** Almost entirely dark colour. White spots

on left dorsal. Whitish area underside of fluke. **Mom:** Underside of fluke, pectoral and a bit under the chin white. Otherwise dark.

When & Where: 01 Sep, near Ovaka.



### 16. BUBBLES

Named for escort's penchant for blowing bubbles. Brief encounter, difficult conditions.

**Calf:** Difficult to ID based on photos we have.

Mom: Mostly dark, white area along jaw line and under chin.

When & Where: 02 Sep, outside Fofoa.









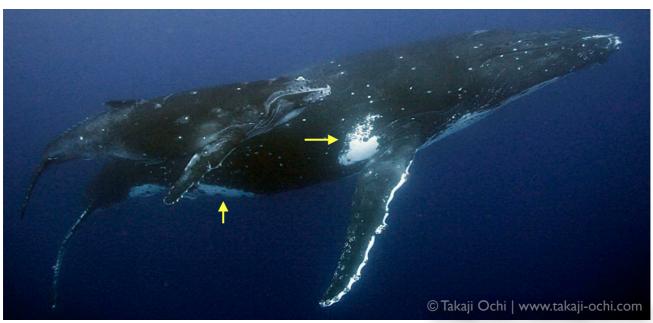
## 17. GELATO ♀

Mom and calf in the middle of large heat run. Mom fed calf while males were active all around the pair.

Calf: Young, very white.
Difficult to ID.
Mom: ID by the white
patches near eye on

both sides.

When & Where: 03 Sep, half way to Fatumanga from Hunga channel.



### 18. DIALGA

Was a challenging calf to ID. Only one look in the water. Other IDs by calf's dorsal fin.

Calf: Sharp, pronounced dorsal fin.

Mom: White patch behind pectoral fin. White lower ventral area.

#### When & Where:

03 Sep, south of Sisia;04 Sep, south ofKapa; 05 Sep, south ofKapa.









## 19. PALKIA

Mom quite shy, so even though visibility was good, unable to get close for extended observation.

Calf: White area in middle of pectoral fin.

Mom: Substantial white area along torso and below/ just behind eye.

When & Where: 03 Sep, inside Hunga channel.





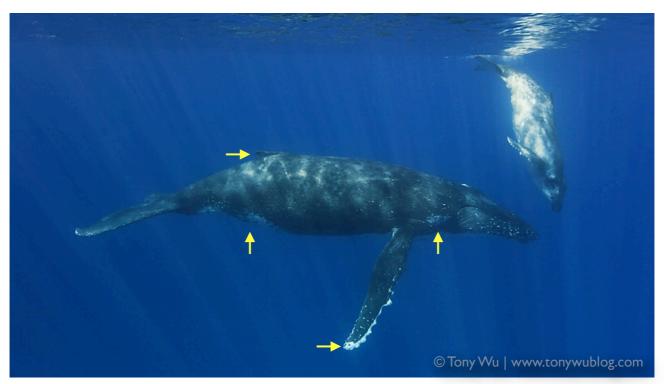
## 20. MAMA'S BOY

Despite being quite big, calf never left mom's side. Difficult to ID.

**Calf:** White patches behind eye.

**Mom:** Have to rely on whole-body ID of white areas and spots.

When & Where: 04 Sep, near main entrance to harbour, behind Tungasika.





## 21. FULL MOON ♀

First found in North Bay during full moon.

**Calf:** Young, difficult to ID on its own.

Mom: Dark on dorsal side, white on ventral with strip of black under chin. White mottling behind eye. Sharp dorsal fin.

When & Where: 05 Sep, North Bay; 06 Sep, inside Hunga channel.



## 22. MEI MEI 우

Came across this calf in the bay above North Bay. Seems to have stayed in the area for a few days thereafter.

**Calf:** White along both sides of torso.

**Mom:** White patches behind eye, and general pattern of white torso areas makes the mom relatively easy to ID.

When & Where: 06 Sep, North Bay; 09 Sept, North Bay. Video of Mei Mei.











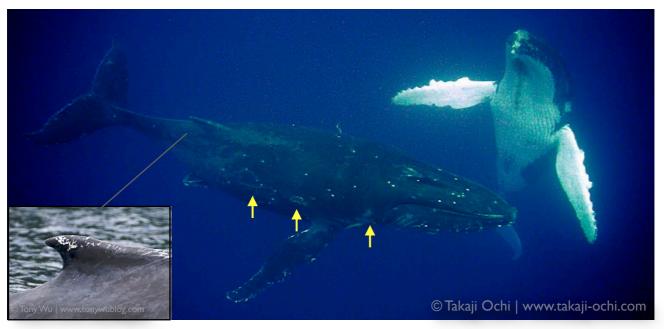
## 23. DARUMA ♀

Initially mis-ID-ed as Mei Mei, due to similarity of mothers and proximity of where and when we encountered the two calfs.

Calf: White border along dorsal area between dorsal fin and fluke.

Mom: White covers part of eye area. Right fluke partially missing.

When & Where: 08 Sep, North Bay.



# 24. IKA ♂

Named for our friend Ongo's eldest son.
Sighted with mom and escort.

left torso and right side of dorsal fin. **Mom:** Mostly dark, some scars/ discolouration. White scratches on dorsal fin.

Calf: White spot

#### When & Where:

07 Sep, outside Hunga (Alexis/ Nathalie); 08 Sep, outside White Patch/ North Bay area.









## 25. NOAH ♂

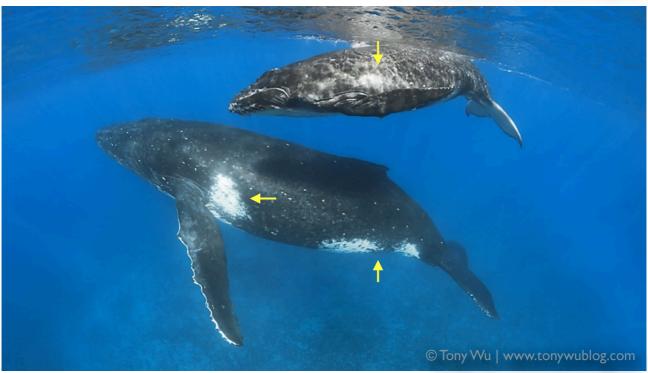
Young calf with mom and very white escort we nicknamed "Tux" because it looks like he's wearing a white tuxedo. **Calf:** Young, difficult to ID on its own.

**Mom:** White patterns on torso are easiest to

identify.

When & Where: 09 Sep, North Bay; 10 Sep, North Bay.





## 26. NOFO ♀

Our last day on the water. Named for our friend Aunofo.

Calf: White area left torso, similar to mom.

Mom: White area left torso and lower ventral areas.

When & Where: 11 Sep, North Bay.





#### 27. TWIST ♂

Calf named for pattern on fluke. First two days, mom shy. Third day accompanied by escort and very curious. (ID: Alexis/ Nathalie) Calf: Unique pattern and notch in right fluke.
White-ish pectoral fins.
Mom: White body patterns.

When & Where: 13 Sep, north of Mounu; 14 Sep, south of Langito'o; 15 Sep, between Mounu, Sisia and Euakafa, with escort.





## 28. HAPPY ♀

Mom, baby friendly. Escort nearby with reproductive organ extended. (ID: Carol)

Calf: Difficult to distinguish on its own. Mom: White patterns on torso easy to ID. Also, far end of left pectoral has a hole in it. When & Where: 06 Sep, near Fonua'one'one and Fangasito.



## 29. FLOPPY ₽

Floppy is the second calf we've seen with this female. (See Chibi-chan calf #16/ 2008 in my 2008 calf summary).

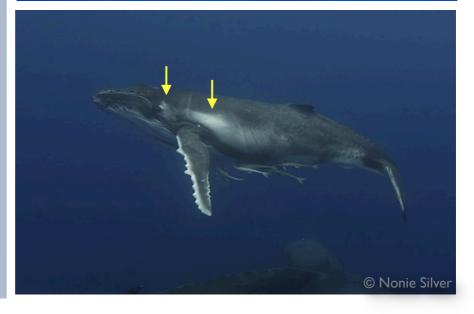
Calf: Shy. Whitish area on body and behind eye.

Mom: Body pattern easy to ID.

#### When & Where:

02 Oct near Taunga (Nonie); 03 Oct around White Patch toward North Bay (Karen).







## 30. KIRAN ♀

First encountered near Luahiapo, moving to south of Ovaka.

**Calf:** Hour-glass pattern ventral area.

Mom: Need to rely on dark patches in white area for ID.

When & Where: 07 Oct near Luahiapo (Nonie).



