

RE: Previous and Recent Acoustic Matches to Vocal Repertoire of Morgan the Orca.
Summary prepared by the Free Morgan Foundation.

(25 September 2011)

Executive Summary

Seven of the nine call types produced by Morgan the orca have now been matched, i.e., 77.7%. These call types been matched to NP (33%) and P (77.7%) Norwegian orca groups, with a further nine groups matched to one or more calls (Table 1).

Such high match rates clearly illustrate that Morgan’s extended family have been identified. Given previous concerns by some parties that Morgan can only be returned to the wild if her family is identified, these results demonstrate that such an argument is no longer valid.

This is especially the case given that *only* “likely” and “possible” matches are included in these results, and attempts to match Morgan’s calls were *only* made to calls of known groups (*i.e.*, there remains unanalyzed data from unknown orca groups). Additionally, there remain substantial databases of orca calls from Norway which have yet to be analyzed and both reports state that the full repertoire of Morgan may not have been collected.

Orca have been present in the proposed rehabilitation location for the past six months and still remain in the area. It is vital that Morgan is returned to Norwegian waters, without delay, to enable her rehabilitation to begin and her ultimate return to her family to be possible.

Executive Recommendations

1. The Free Morgan Foundation strongly recommends that Morgan’s rehabilitation in Norwegian waters begins immediately.
2. Concurrently, her contemporary vocal repertoire can be recorded, as well as further recordings of wild orca in Norwegian waters, to allow refined searches to be made for Morgan’s natal group (including analyzing further databases).
3. It is imperative that further delays are prevented and that the welfare of Morgan is addressed by allowing her to return to her family.

Table 1. Summary of Morgan’s call types and the Norwegian orca groups they were matched to. A total of seven of the nine call types were matched (77.7%). Call type M8 & M9 were not matched.

Morgan’s call (+ subtype)	Norwegian Orca Group
M1	NP; P
M2 (i) M2 (ii) M2 (iv)	NP; BI+AA; P
M3	NA; NÅ; NG; P
M4	P
M5 (iii) M5 (iv)	NP; NT; NK; P
M6 (ii) M6 (iii)	AM; P
M7 (i) M7(ii)	BI; AA; P Unknown (herring-feeding)

Details

On the 5th of 2010 Samarra et al (2010) provided a report on the analysis of the recordings made of Morgan the orca. A subset of 10% of her calls were used to compare to wild orca calls from the North Atlantic. From these, nine stereotyped call types could be divided into 21 total subtypes.

Samarra et al (2010) found “good likely” matches to three of the nine stereotyped calls in Morgan’s repertoire (Table 2). Their results strongly indicated that Morgan was from the Norwegian herring-feeding population of killer whales and likely to be related to the NP group. They also concluded that *“Further analysis of sounds produced by Morgan could lead to identification of more stereotyped calls in her repertoire.”*

Based on this recommendation, the Free Morgan Foundation has repeatedly insisted that further analysis be carried out on the acoustic repertoire of Morgan. However, the *Dolfinarium Harderwijk* has not permitted more recent recordings to be made. The Ministry for Agriculture and Foreign Trade (the governing body for Morgan’s fate) decided that the previous recordings and the subset of her calls (i.e., the 21 call types and subtypes) would be compared to newly available material from Vester.

On the 23rd September 2011 Vester & Samarra (2011) reported on this further analysis and stated that a further five matches were made (therefore a total of seven of the nine call types have now been matched, i.e., 77.7%). In total eleven matches of the 21 call types and subtypes have been found (total = 52.4% matches), (Table 1 & 2). This dramatic increase was found despite only using the original data set of Morgan’s calls.

Due to time constraints Vester & Samarra (2011) only reported the “likely” and “possible” matches and only attempted to make matches to calls which were from known groups (i.e., there remains unanalyzed data from unknown orca groups). The Vester and Samarra (2011) report also states that the call repertoire of Morgan has not been updated and that there is still substantial data from wild orca in Norwegian waters (both known and unknown orca groups) which have yet to be processed therefore these have not been compared to Morgan’s repertoire.

The overall conclusion of the Vester & Samarra report was that it is likely that the complete vocal repertoire of Morgan has not been collated (perhaps due to her age or her being kept in solitary confinement in a concrete tank) and that further research may reveal more matches. Yet despite these constraints, they state *“... we do consider it likely that Morgan is either from group P or a group closely related to group P.”*

Conclusions

Based on the findings of the Vester & Samarra (2011) report on further analysis of Morgan’s acoustic repertoire the Free Morgan Foundation strongly recommends that Morgan’s rehabilitation in Norwegian waters begins immediately.

Concurrently, her vocal repertoire can be recorded and new call types sought. These, along with comparisons to the previous recordings can then be made to the unanalyzed data. Additionally, at the same time further recordings of wild orca in Norwegian waters can be collected to expand the knowledge of this population and to allow further searches to be made for Morgan’s natal group. It is clear that the extended family (i.e., NP / P pod) has been located.

If the advice of the Free Morgan Foundation had been expedited Morgan may have already been with her group rather than languishing in the barren tank she has remained in for 15 months. As of this week

there were orca in the fjord system we had proposed for her sea-pen, clearly indicating that we had formulated a robust rehabilitation plan, including the location of her sea-pen.

It is imperative that further delays are prevented and that the welfare of Morgan is addressed. Her return to Norway must be undertaken immediately.

References

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Table 2. Details of matches of call types, pod groups and additional details from the Samarra et al (2010) and the Vester & Samarra (2011) reports. 10% of Morgans calls were used (comprised of nine call types) and a total of seven of the nine call types were matched (77.7%).

Morgan's call (+ subtype)	Norwegian Orca Group	Match Classification	DATABASES COMPARED (known animals only)	COMMENTS	REPORT
M1	NP	good likely	Shetland (Volker Deecke) Iceland (Moore et al. 1988) (Samarra et al 2008-2010) Norway (Moore et al. 1988), (Strager 1993), (Van Parijs et al. 2004), (van Opzeeland et al. 2005) (Shapiro 2008). (Heike Vester) (Floriane Plard 2005-2009)		Samarra et al (2010)
M2 (iv)	NP	good likely		Dtag o09_144a	Samarra et al (2010)
M5 (iv)	NP NT NK	good likely		N15+buzz described in Strager (1993)	Samarra et al (2010)
M3	NA NÅ NG	possible		N95 described in Shapiro (2008) tag 314s Dtags	Samarra et al (2010)
M7 (i)	Unknown (herring-feeding)	possible		N100 described in Shapiro (2008), Tag oo06_327	Samarra et al (2010)
M1	P	likely	NOTE: SUBSET OF DATA ONLY USED (more recordings to be analysed at a later date) Norway (Heike Vester)	match to call N10	Vester & Samarra (2011)
M2 (i)	P	likely		combination of calls N46+N47	Vester & Samarra (2011)
M2 (ii)	P BI+AA	likely		combination of calls N46+N4i	Vester & Samarra (2011)
M2 (iv)	P	likely		combination of calls N39iii+N47	Vester & Samarra (2011)
M3	P	likely		call N47i	Vester & Samarra (2011)
M7(ii)	P BI AA	likely		call N4ii	Vester & Samarra (2011)
M4	P	possible		call type N46	Vester & Samarra (2011)
M5 (iii)	P	possible		call N15ii	Vester & Samarra (2011)
M5 (iv)	P	possible		call N15iii	Vester & Samarra (2011)
M6 (ii)	P AM	possible		call N6	Vester & Samarra (2011)
M6 (iii)	P	possible		call N20	Vester & Samarra (2011)