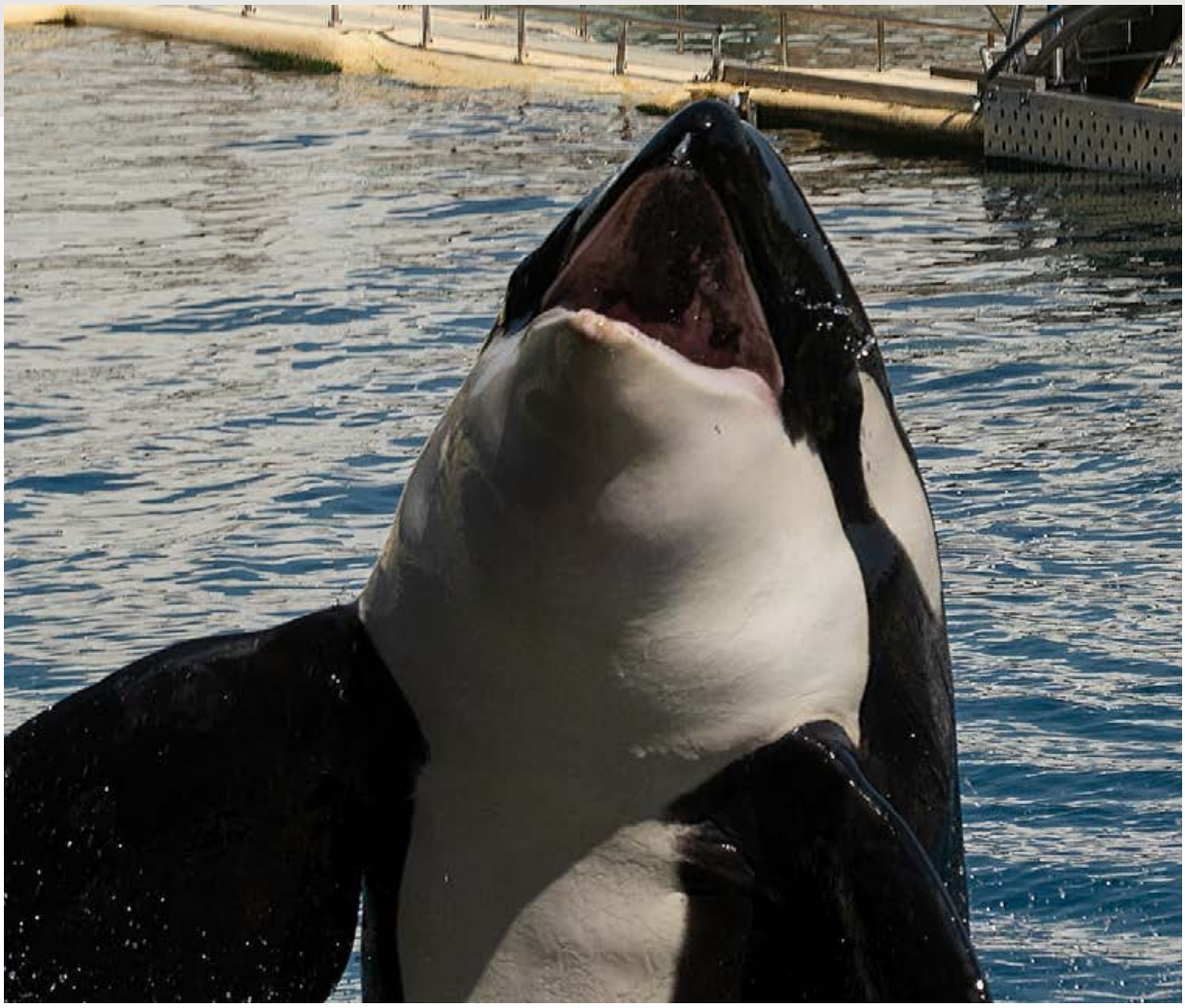
Expert report, August 2020 update

INOUK

CAPTIVE 20-YEAR-OLD MALE ORCA, WITH CHRONIC AND EXTENSIVE TOOTH DAMAGE



Inouk, on 27 June 2020, has no teeth due to stress related issues. Photo: supplied.

Report prepared for OneVoice by Ingrid N. Visser (PhD)

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EXECUTIVE SUMMARY

In March 2019, together with two colleagues, I prepared a report about Inouk, a 20-year-old captive-born male orca with severely damaged teeth, who is held captive at Marineland Antibes, France.

Since that report, the facility has been closed for seasonal and Covid-19 related reasons. It recently reopened and on the 27th of June 2020 a member of the public took photos which were supplied to me. I provide herein an overview of what can be observed in these photographs and a reiteration that the situation is one of compromised health and welfare for this orca.

The photographs illustrate that the situation for Inouk remains of concern. The gums around Inouk's damaged teeth have changed, again indicating either no change or an acceleration of the deterioration of his dental issues. One of his behaviours (regurgitation) was documented during the visit, suggesting that, at best, the situation has not improved for him, but it also suggests that the issues may have escalated. Regurgitation in captive cetaceans (whales, dolphins and porpoises) has been linked to aggression from tank mates and stress. Inouk has also been documented with extensive damage to his chin/throat area.

It is my professional opinion that the health, behaviour and aggre

ssion records for Inouk should be made available to external independent orca experts. This would allow an accurate assessment of the full extent of the issues Inouk faces.

It is my recommendation that Inouk is retired into a seaside sanctuary where he would have more space, natural seawater and appropriate medical attention. At the very least, he should no longer be expected to perform circus-style tricks in return for his food and his participation in the shows should be ceased immediately. He should be given more space to allow him to avoid aggression from the other orca.

UPDATED DETAILS OF INOUK'S COMPROMISED HEALTH:

In the Visser et al (2019) report to One Voice we provided an assessment of Inouk's compromised health based on the evidence, including documents prepared by the staff of Marineland Antibes.

The staff had identified serious health and behavioural issues that Inouk was facing.
These included his;

- **Teeth & dental issues**
- **Stereotypies** (abnormal, repetitive behaviour)
  "biting the concrete walls"
  "regurgitation".
  "dominated by all the other whales" (i.e., aggression from the other orca)
  "often sick, due to aggressions of the other animals or teeth infections".

That Visser et al (2019) report explains the context of these issues, with respect to published scientific literature, including from SeaWorld who own the largest collection of orca in the world.

I mention these again, as they are relevant to the new evidence collected on the 27th of June 2020. However, I note that without access to the medical, veterinarian, laboratory and behavioural records it is not possible to ascertain the exact extent of these issues and based on my experience with captive cetaceans they are likely to be much worse than can be noted from just a few photographs from a single visit. In other words, what I note is likely just the 'tip of the iceberg' and more robust information would reveal not only how extensive these issues are, but others that are not visible in these photographs.

Teeth & dental issues
Inouk's teeth continue to show issues. Figure 1 shows the progressive growth of the gums over the cavities drilled into the teeth (particularly over tooth 2 between 2016 and 2019. Such gum growth can create pockets that cannot be flushed properly (which the Marineland notes say needs to be done twice daily) and therefore are likely to result in infections.

Regurgitation
Photographs (Figures 2-5), taken on 27th of June 2020 show at least two instances of regurgitation by Inouk. This has implications for the remaining nubs of his teeth (the acidic nature of regurgitation will continue to erode the teeth). However,r it also has implications for his tongue, oral cavity, throat and his whole gastrointestinal tract due to the acid. Please see the Visser et al (2019) report for more details about this issue.
Regurgitation is typically associated with stress and often results from aggression from the other animals, as described by the staff.

Sub-dermal damage
Photographs (Figures 6 and 7), taken on 27th of June 2020 show extensive sub-dermal damage to the 'chin' and 'throat' area of Inouk. The possible etiology for this damage is suggested in Figure 8, where Inouk presses up against the concrete of the show platform while begging for food. The notes from Marineland (provided in Visser et al (2019)), indicated that Inouk had trouble keeping his weight due to being "often sick" and that it is "always hard to keep his food base high" which, in other words is that he has trouble eating even the basic amount needed to maintain him. When an animal begs for food in such a desperate way as seen in Figure 8, it is indicative that there is an underlying issue at hand. Without the full records for Inouk it is not possible to determine what they are.

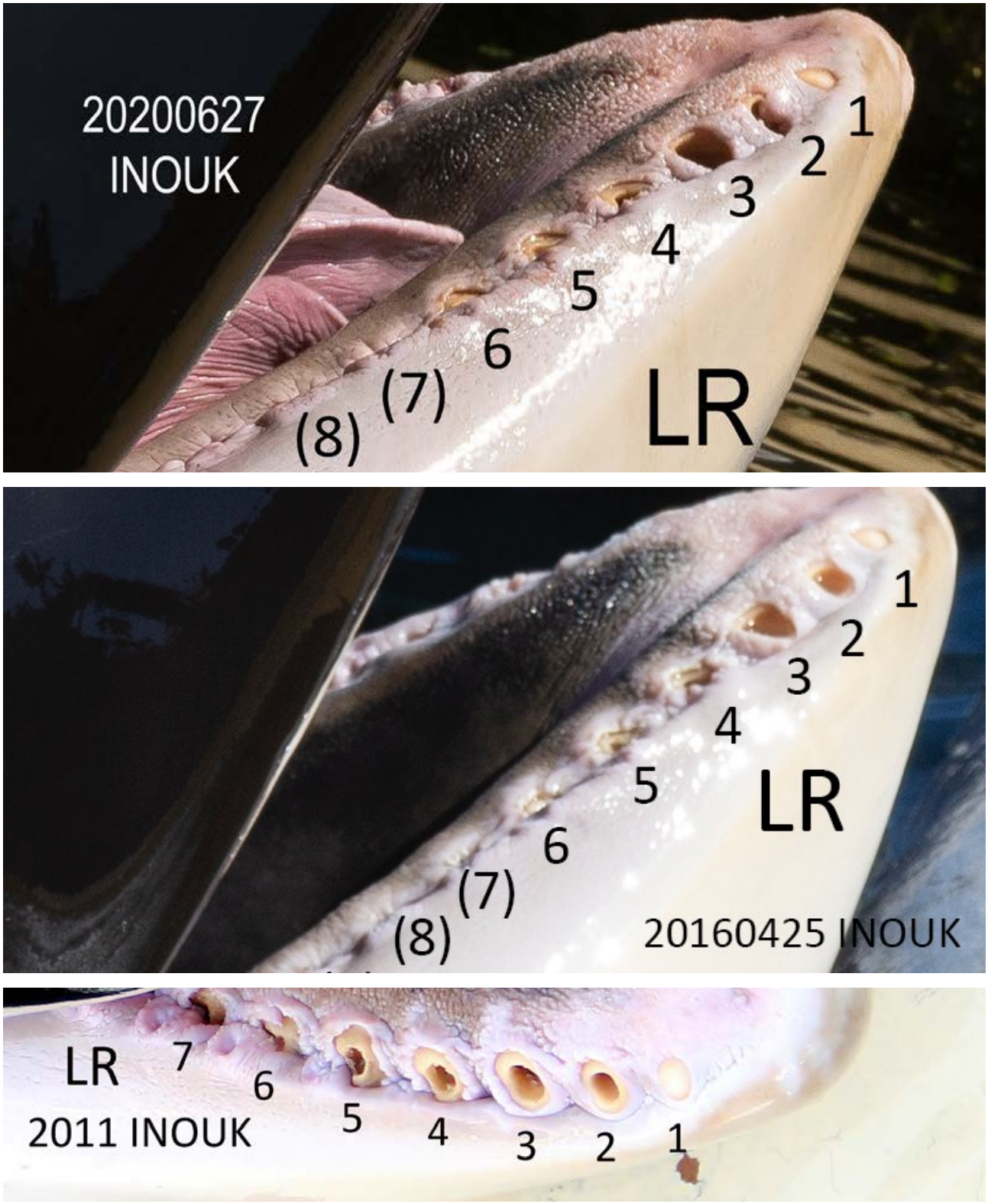

Figure 1. Comparison:
Top: *Inouk's lower teeth on 27 June 2020, showing extensive dental damage, with teeth worn to the gums as well as drilled teeth. Note that the Lower Right (LR) tooth #2 has more gum protruding into the drilled hole, than in the two images below.*
Middle: *the poor status of Inouk's teeth on 25th May 2016.*
Lower: *Inouk's teeth in 2011. This image provides an indication how much the gums have continued to protrude into the drilled teeth. Photo cropped and rotated from Figure 13 in Visser et al (2019) report. Photo credits (top and lower, supplied. Middle © Ingrid N. Visser).*

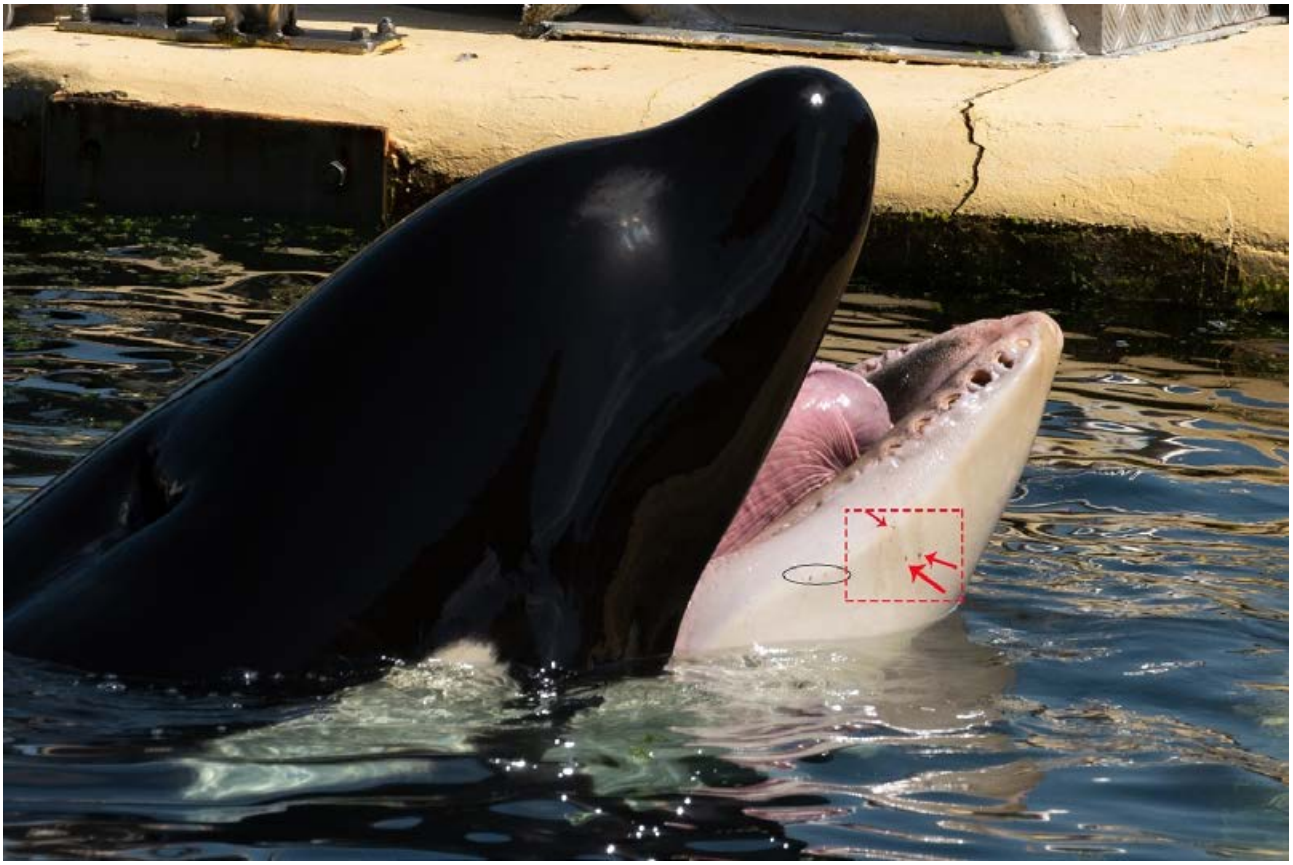

Figure 2. *In this photo (#55, taken at 11:20:19hrs), Inouk has regurgitated and the mostly liquid remains of that are dribbling down the right side of his mandible. See Figure 3 for close ups.*
Inouk has natural pigmentation 'freckles', four of which are circled as reference points for comparison to Figure 4. Also note the poor condition of the tank, with the large crack clearly visible. Photo provided.

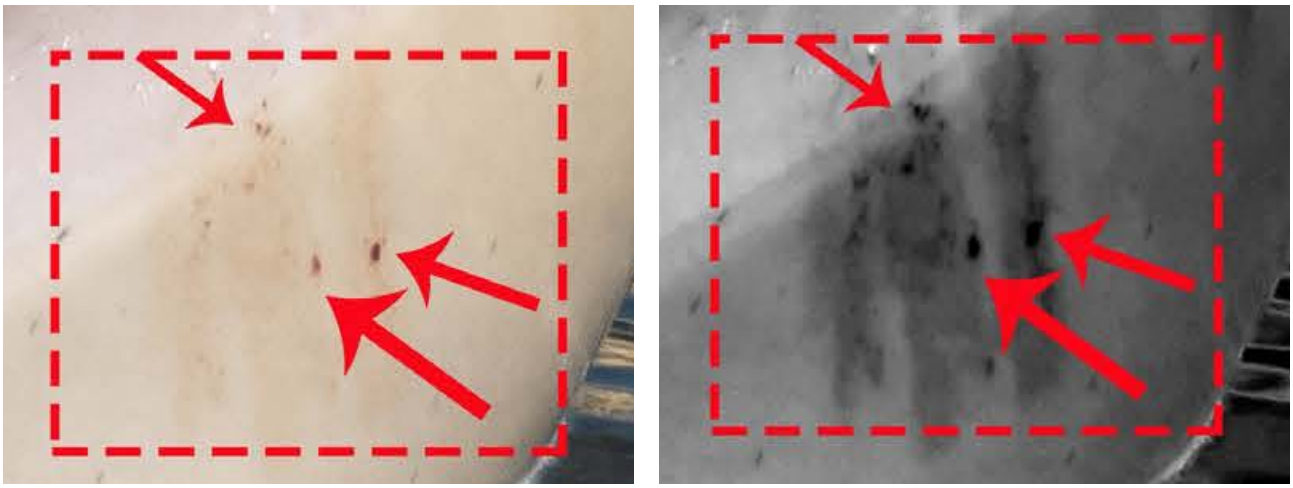

Figure 3. Left: *in a close-up of photo #55, larger pieces (arrows) in the regurgitation can be seen and the pink/brown colour, typical of regurgitation is more visible.*
Right: *the same image converted to black and white (and the contrast adjusted) so that the regurgitation is more visible.*
See also document 4. Photo provided.

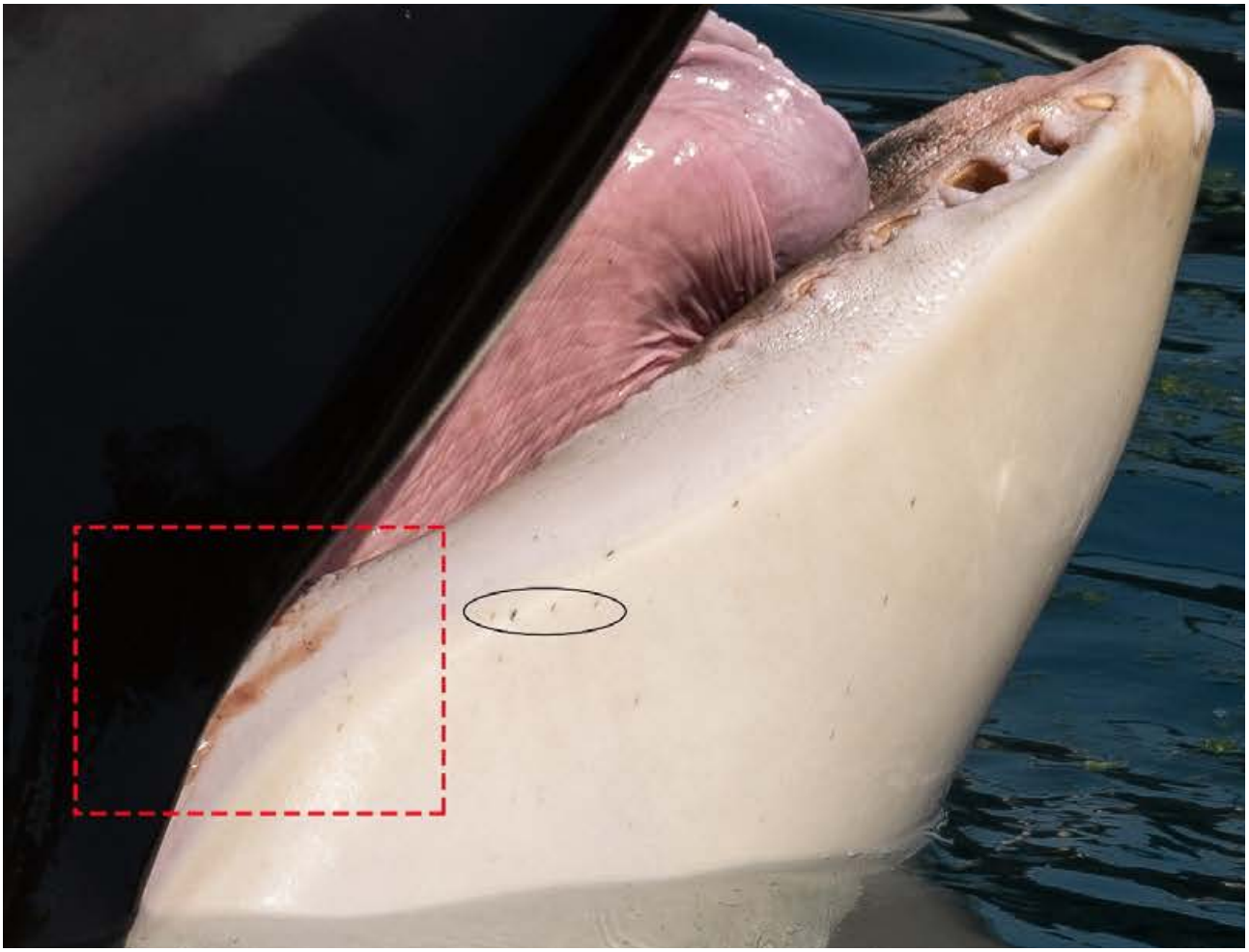

Figure 4. *Regurgitation in the corner of Inouk's mouth. This is photo #68 (taken at 11:20:48 hrs, i.e., taken 29 seconds after photo #55) another regurgitation has been documented. The regurgitation seen in photo #55 is no longer visible in this image as it has 'washed' off (although four of his dark freckles on his skin are still visible, circled, see Figure 5 for a closeup).*

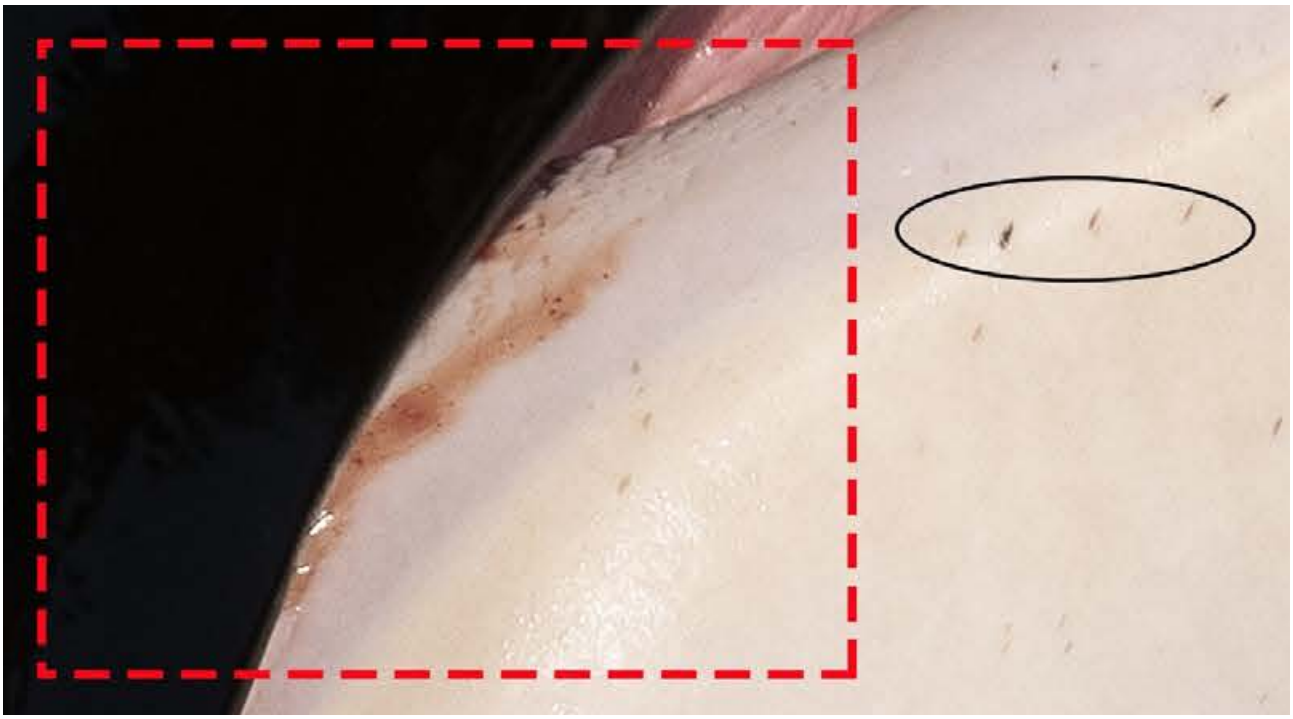

Figure 5*. Closeup of photo #68 (Figure 4), showing regurgitation in the corner of Inouk's mouth. Four of his dark freckles on his skin are, circled,).*

Figure 6. *Inouk has sub-dermal damage. Although this photo (#158) was taken at least 20m away from Inouk, the damage to his 'chin' and 'throat' area is visible as a raised and 'marbled' zone. See Figure 7 for more details.*

Figure 7. *Using the same photo as Figure 6, I have adjusted the contrast and levels, to show the extent of the damage. See Figure 8 for potential aetiology for this damage.*

Figure 8. *Inouk, pushing hard up against the side of the platform, begging for food during a show. This behaviour may be what is causing the damage to his 'chin' and 'throat' area as depicted in Figures 6 and 7. Photo: supplied.*

Based on the evidence presented here, it is my opinion that Inouk has continued to suffer due to a whole suite of issues. This includes, but is not limited to, his extensive and dramatic dental damage, his underlying behavioural issues in the form of regurgitation and the sub-dermal damage to his chin/throat area. The latter is an issue that was not documented previously for him, although it may have been present before it was photographed in June 2020.

It is at this point that I wish to comment on the dental issues that Inouk faces in captivity compared to those that orca face in the wild. The captivity industry often claims that the tooth damage seen in captive orca is the same as that seen in some wild orca populations. This is a complete misrepresentation of the facts. It appears such claims are used in attempts to deflect attention away from the suffering of the orca in captivity. For the record, the facts and the comparative claims are as follows;

Fact 1: Orca in the wild use their teeth to grasp their prey (Figure 9), however they do not chew or grind their food (although the teeth can puncture the prey (Figure 10) and also be used during food-sharing, Figure 11).

Conversely, *orca in captivity do not typically use their teeth to handle any food – the food is thrown into the back of their mouths/throat and it does not come into contact with the teeth (Figure 12).*

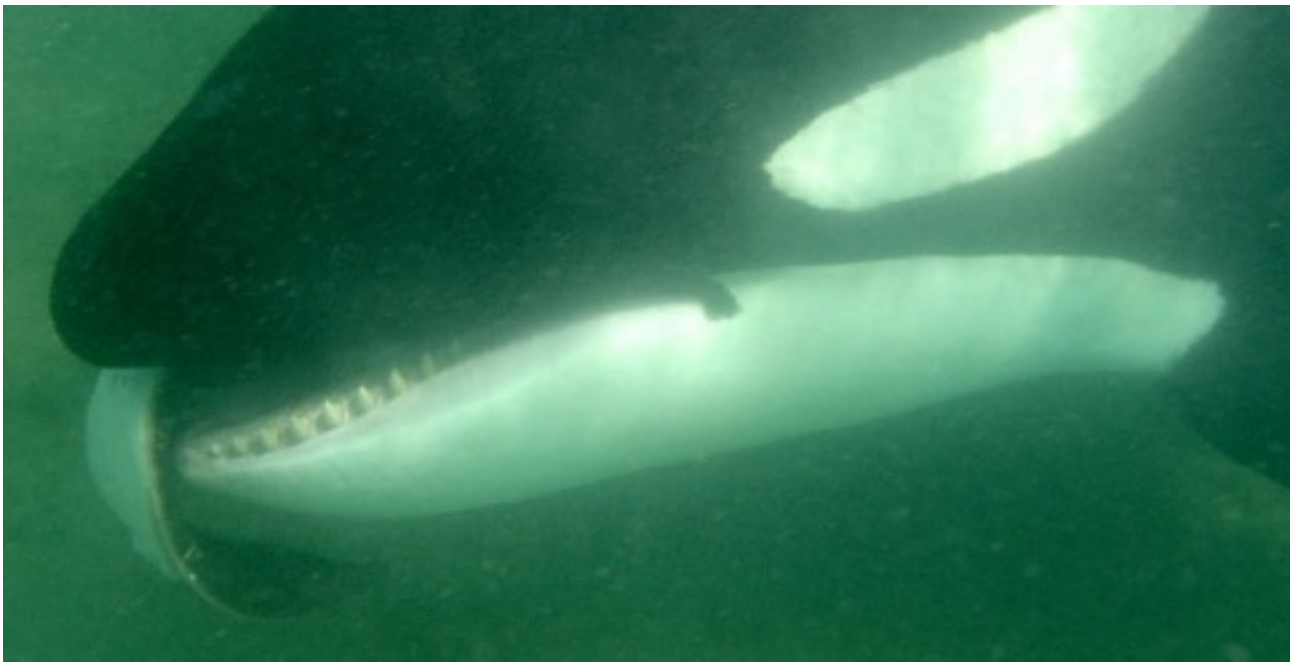

Figure 9. *A subadult male orca (at least 19 years of age) in the wild (New Zealand) grasps an eagle ray in its mouth. Note the 'pristine' nature of his teeth, despite the use of the teeth and the prey. Photo Ingrid N. Visser (taken 20100927).*

Figure 10. *The remains of an eagle ray, which was killed by an orca in New Zealand waters. At least 13 puncture marks can be clearly seen, where the orca teeth pierced the skin and went into the flesh of the ray. This part of the ray body was seaparated from the rest during 'food sharing' – see Figure 11. Photo, Ingrid N. Visser (taken 20110102).*

Figure 11. *Two orca food share an eagle ray in New Zealand waters, by each grasping parts of the ray and moving apart. Photos, Ingrid N. Visser (taken 20040727).*

Figure 12. *In captivity all of the natural aspects of foraging and prey handling are taken away from the orca. Instead, food is just thrown into the back of the orca's mouth (in this case, Inouk). The food does not touch his teeth and no grasping is required. Photo Ingrid N. Visser (taken 20160424).*

Fact 2: some orca populations show teeth wear (i.e., most, if not all, of the individuals within that given population have similar issues with their teeth), but such specific tooth-wear has been linked to the type of food they eat and/or the way in which they feed (suction feeding). Furthermore, the wearing down of the teeth of these orca populations is typically exhibited by more wear at the front of the jaws and less at the back. It is generally 'even' and occurs gradually (i.e., the older an orca, the more worn its teeth, Figure 13).

Conversely, *in captivity the teeth wear is erratic, many of the teeth are broken off (Figure 14), rather than worn, and where worn are often drilled to allow the trainers to 'flush' the activities to try and avoid tooth infections (see photos of Inouk in this update and the Visser et al (2019) report. Often, even very young orca in captivity exhibit extremely damaged teeth (Figure 15).*

Figure 13. *The tips of the teeth of this dead wild adult female orca are worn due to the type of food it eats or its feeding method. Note that the teeth are worn evenly. The large splits in the teeth are due to the poor drying method at the museum and occurred after the orca died. Photo, Ingrid N. Visser (taken 20160714).*

Figure 14. *The tips of orca teeth in captivity are often erratically worn or broken off.* ***Top:*** *seaWorld, Orlando, USA.* ***Bottom:*** *Loro Parque, Tenerife, Spain. Note in both photos the damage to the tip of the mandibles, from the orca continually hitting the side of the tank due to stereotypies. Photos Ingrid N. Visser (Top taken 20150706, Bottom taken 20160420).*

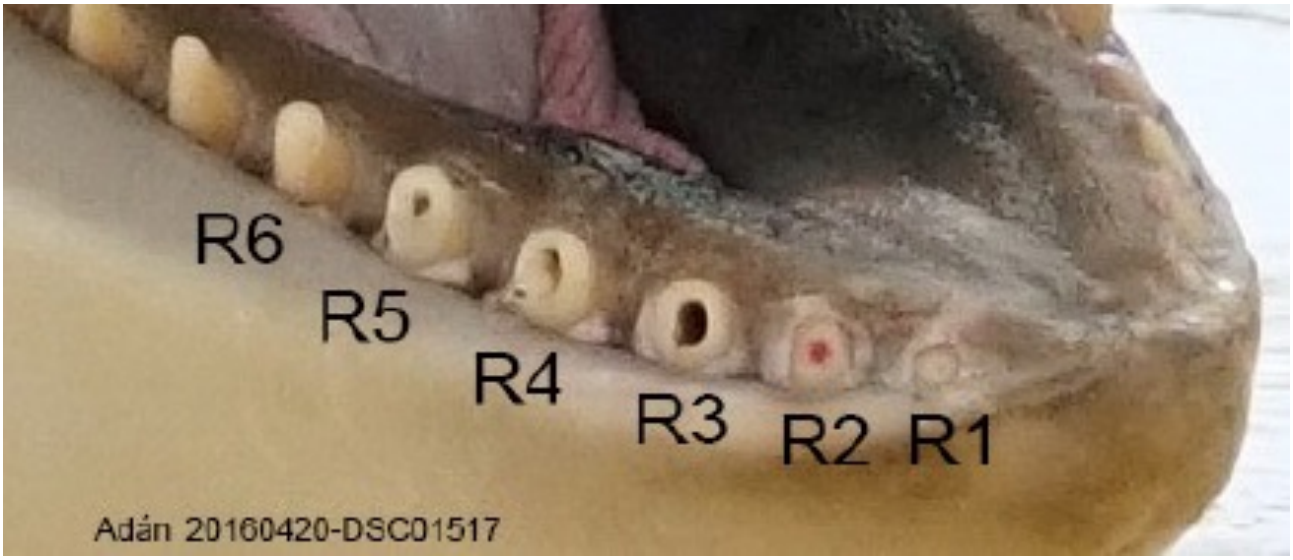

Figure 15. *This orca was only 5 years and 6 months old when this photograph was taken. Note the number of visible drilled teeth and the red center of R2. Photo, Rosina Lisker (taken 20160420).*

It is my professional opinion that the health, behaviour and aggression records for Inouk (and for all the other orca held at Marineland Antibes, i.e., Moana, Keijo and Wikie) should be made available to external independent orca experts. This would allow for a more accurate assessment of the full extent of the issues these orca face. Additionally, these health records would facilitate appropriate steps that need to be taken in order to address the plethora of health and welfare issues that are clearly evident at this facility.

It is my recommendation that Inouk is retired into a seaside sanctuary where he would have more space, natural seawater and appropriate medical attention. At the very least, he should no longer be expected to perform circus-style tricks in return for his food and his participation in the shows should be ceased immediately. It is standard practise to not feed a performing animal the full amount for a 'trick' that it does not complete 'perfectly'. The demand to perform every trick, every time, perfectly is also increased when there are multiple animals involved as the other animals 'watch' and take cues from the behaviour of each other. This leads to competition and increased stress levels.

Therefore, other less stressful activities can be implemented to assist in maintaining Inouk's physical fitness, including daily exercise sessions where he is not required to 'perform' to perfection, nor required to 'compete' with the other orca. Inouk should be given more space to allow him to avoid aggression from the other orca. He has a reduced ability to defend himself, given that he has no teeth left. To provide full transparency, all feeding, health (including veterinarian, medication and laboratory records), behaviour and agreession records should be made available.

In summary, Inouk suffers from acute and chronic stressors associated with unnatural confinement. In effect, he has a reduced quality of life due to captivity.

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