

## SOLVING A LIFE-THREATENING REGURGITATION PROBLEM IN A CALIFORNIA SEA LION THROUGH TRAINING AND SATIATION

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In 2009 at France's Amneville Zoo the 8-year-old, captive-born, castrated male California sea lion (*Zalophus californianus*) 'Gipsy', started to play with fish and anticipate the end of sessions. His diet and show participation were adjusted. However, by August of that year, he was leaving all sessions to regurgitate and consequently lost a lot of weight, going from 130 kg (287 lb) down to 86 kg (190 lb) at his lowest point. He had a couple of fits and was even declared dead by cardiac arrest after one fit, but unexpectedly "resuscitated" when brought away.

By this time we knew we were facing a life-threatening regurgitation problem. After the veterinary department had worked through the differential diagnosis for the possible cause of these fits, we implemented several protocols with main objectives of, controlling his weight loss, maintaining his weight, and diminishing his regurgitation. These protocols included: 1) keeping him without access to water, because we had identified that he regurgitated only when having access to water. However, because you can't keep an animal permanently out of water, we decided to start a second protocol, based this time on training, because the problem was much more likely related to boredom. 2) We taught him many new behaviors, including, medical behaviors, show behaviors and even things that were absolutely unnecessary but were just to keep him occupied. Two staff persons were dedicated to the training of Gipsy full-time during the day. We were also extremely strict in our use of operant conditioning, and, if the animal would leave his trainer to go to the water (because there, he had the possibility to regurgitate), we would stop the session and interaction for the rest of the day. We wanted the animal to learn that he had to stay with his trainer to keep interacting to be reinforced. Even though we had increased his weight and were maintaining it, we were still not successful in reducing the regurgitation. Each time he had access to the water or when he knew he could gain access to the water, he would go and start regurgitating immediately. It had become extremely self-reinforcing. As we realized it was a permanent problem, it was very difficult to dedicate two full-time staff for a whole day to only one animal, so we decided to work on a 3rd protocol. 3) Based on a paper presented years ago at IMATA by Tish Flynn, we decided to use satiation to try to fix the problem. We hired interns to make constant observations of Gipsy and keep detailed charts about his behaviors. We continued doing extra training sessions like before but very frequently we would offer him a huge container of fish, up to 20 kg (44 lb) at once. We also developed more secondary reinforcers for him, to give him access to extra food through toys, games, etc.

The satiation program worked very well with him and his time regurgitating in the water dropped from 42% to 12% within the first month of implementation. We made some mistakes along the way, but eventually all our objectives were reached. Gipsy is alive and healthy, reaching 160 kg (353 lb) this summer. He is back with the social group, performing shows, and seldom leaves the show or a training session to regurgitate.

As a general conclusion, we can say that regurgitation is a complex behavior that may never be completely eliminated. It is important to make sure that the animal is not losing more calories than he's absorbing. Observation and team communication are extremely important to assess the gravity of the problem objectively. The satiation protocol works very well, however, it's a permanent treatment. It should NEVER be stopped. An animal with such a problem needs to have a higher percentage of his time with occupational activities.

### References

- Flynn, T. (1987). Conditions and treatment of an eating disorder in a Pacific walrus – an anecdotal report. *Proceedings of the 15th annual IMATA conference*, New Orleans (pp, 39-46).