

behaviour. However, males did not discriminate between conspecific and heterospecific *Dascyllus* sounds. Amongst the manipulated temporal features, only sound duration significantly affected responses, with longer sounds eliciting stronger reactions. Our findings show that simple pulsed sounds can trigger courtship but are insufficient alone for species discrimination in *D. trimaculatus*. These results contrast with earlier damselfish work demonstrating species recognition through pulse number and pulse period. Our study suggests that species-specific recognition may rely on multimodal cues, such as visual signals, and that recognition strategies differ among genera. The effect of sound duration is consistent with broader evidence that call length reflects motivation or condition across multiple animal groups. Conducted in the field, this study provides rare experimental evidence of how sounds influence behaviour in reef fishes.

### **37. The impressive evasive performance of an aquatic prey**

Lars Koopmans *et al.*

Pursuit and evasion dynamics are a universal phenomenon observed across terrestrial, aquatic, and aerial environments. While these interactions have profound implications for ecological and evolutionary dynamics, our understanding of the mechanisms that govern them remains surprisingly limited. This is primarily due to the scarcity of high-resolution behavioral data on predator–prey interactions. To bridge this gap, we conducted a field study on coral reef fish in Curaçao, where we developed a novel stereo-camera method to reconstruct precise three-dimensional predator–prey trajectories. To our knowledge, this approach generated the first high-resolution trajectory data on aquatic pursuit and evasion in the wild. Our findings reveal that despite being substantially slower, prey successfully evaded predators in 97% of the attacks. By comparing observed behaviors to a computational model of pursuit–evasion dynamics that incorporates biomechanical constraints and sensory–motor delays, we show that prey achieve this remarkable success by timing their maneuvers with high precision, exploiting the sensory–motor delay of their predators.

### **38. UV-exposure Computation in Black Rhinoceros**

Remco Veltkamp *et al.*

Vitamin D3 synthesis in black rhinos through exposure to sunlight is an ongoing research topic. To support this research, we have monitored the degree of exposure to artificial UVB lighting of rhinos under human care during specially scheduled UVB exposure sessions managed by the caretakers. By combining footage from various cameras, the position of each rhino is tracked and reconstructed as a surface used to determine the degree of light absorption, which is recorded in a daily register. Additionally, the indoor and outdoor movements of the rhinos are tracked throughout the day to account for their exposure to natural sunlight. This UV-exposure register directly supports a concurrent research project in veterinary analysis carried out on the same animals, which includes the measurement of vitamin D3 levels through blood tests. To measure the outdoor UVB-exposure, we employ a convolutional neural network trained on outdoor camera images to detect at which times each rhino was positioned indoor or outdoors. When they are outdoors, we use weather data from the Dutch Royal KNMI to determine the estimated UV-index per time point. Each day, a 30-minute artificial UVB exposure session was held. To estimate the UV-exposure during this session, we use an area exposure algorithm based on the result of a back-projected combined foreground estimation. The recorded footage of three cameras are combined to plot the average UVB-exposure across the exposure session. This data was then merged into the final dataset at the appropriate time points.

### **39. Exploring Self-Medication Strategies in Phyllostomid Bats Using Behavioral, Movement, and Omics Approaches**