

Henry Kayondo

Hoof stock Department

Emirates Park Zoo

Abu Dhabi (United Arab Emirates)

ABSTRACT

Management of a mixed species exhibit WITHOUT rotation, at Emirates Park Zoo

(United Arab Emirates “UAE”)

In the wild animals stay together in harmony, this coexistence is being introduced by captive wildlife husbandry practices through using mixed specie enclosures or exhibits however, managing a Mixed enclosure exhibit is one of the most common challenges that is faced by organizations carrying out wildlife husbandry all over the world and these may include Zoos, Sanctuaries, Rescue and Rehabilitation Centers. Emirates Park Zoo has got one of the most successful mixed species enclosures called the Giraffe Park with an area of 1712.78 m² and this area is housing Three female Giraffes, seven Rhim Gazelle, Two Ostriches, 19 Guinea fowls, seven Fallow Deer's, Two Zebras and three Crowned Cranes. All these animals do exist in harmony and there is breeding success of some individual species. Being a mixed specie enclosure one expects many challenges that have to be addressed if coexistence is to take place and this is done by the provision of minimum requirements needed by individual species in this environment BUT still one has to put in mind that all species have to share most of the ecological requirements, so we archived it as follows; We made sure that this enclosure is large enough to cater for different specie distances like their contact distance, Flight distance and social distance and if any of these distances were compromised, then coexistence would cease to exist. Of more importance still we made sure that these mixed specie animals have relating habitats and relating mode of feeding behaviors in this way we had herbivores that include browsers/arboreal and grazers, all together diurnals. As a good management strategy we made sure that all individuals that were to be introduced would almost be of similar age group together with same methods of socialization that is to say if there was to be hierarchism through acquiring dominancy, then this would reduce the potential for dominant interaction from the larger species that is if there was chance to create inter-specific rank order within the enclosure. **Inter-specie resource competition control;** as a mixed enclosure exhibit we all expect to get competition for resources like food, water and breeding/ mothering areas, shelter. Here all these were catered for as follows; with food we provided multiple feeders and feeding points and we managed to control successful free feeding of Ostriches that had been so challenging because of the giraffes that were reaching every feeding point of our Ostriches. Multiple Drinking Water points were also provided that catered for different animal heights then with breeding/mothering areas we provided multiple breeding areas for each animal that could give birth or hatch its eggs and if mothering was becoming a challenge we would isolate the mother together with its neonate for proper parental care. **Conclusion;** A mixed specie enclosure is the best way to keep most of our zoo animals because if we are to relate with what happens in the wild these animals do not live separately, there is always “coexistence”.

1. Introduction:

Many zoos in the whole world, you will find that they practice single specie enclosure management yet we are saying if we are to think today as to keep tomorrow then we have to think of animal **coexistence**. Definitely this is what we are doing at Emirates Park Zoo where our concern is about how we may change the concept of keeping captive animals in separate enclosures yet they can also be merged together and stay in harmony.

The rest of my paper contain **section: 2** that is describing the background of my study followed by **section: 3** that is containing the real management strategies of mixed specie enclosure, lastly is the **section number: 4** about my conclusions and recommendations.

2. Background;

In captivity most animals are compromised of their choices that they would have faced in nature and this is done through provision of food instead of hunting, provision of shelter instead of individual animal looking for its' conducive shelter, provision of medical care where the animal has no choice at all, making decision about animal group composition for example establishment of breeding pairs and general socialization is emphasized not by choice , all this through acclimatization , the animals get used to the situation.

Mixed specie enclosure makes it easier for evaluation of animal collection in regard to fulfilling all required animal welfare that would include a) Behavioral animal welfare b) Environmental animal welfare c) Husbandry animal welfare and lastly d) Health animal welfare.

With visitor experience, mixed specie enclosure plays a greater role because the visitors are given a variety of comparison both physiologically and anatomically plus relating different animal interactions which makes a greater reflection of what happens in the wild where there is prevailing coexistence. More still it helps in creating awareness to the general public about the physical and psychological needs of different captive wild animal species.

Besides saving space, mixed specie enclosure encourages effective food utilization in a way that for example if we are to consider herbivorous animals, for selective feeders will only eat parts of the food and leave the rest but because the enclosure has bulk feeders also as part of the collection, they are able to consume all the remaining presented food.

Provision of the minimum requirements needed by individual animal species in a mixed specie enclosure could be of the most expected challenges because most of the ecological requirements have to be shared by all individuals that are residents of the enclosure. This could not be a limiting factor that would prevent zoos from having mixed species enclosure husbandry because all ecological requirements can be shared in harmony through inter-specie resource competition control strategies.

Putting into consideration how differently animals perform with regard to a) Enclosure design, b) Specie-Specific ecology, c) Phylogeny, and then we are able to provide the best wellbeing of our mixed specie animals as they stay together in harmony for display.

3. Management strategies of a mixed specie enclosure;

Before we started a mixed specie enclosure there many aspects that we had to put into consideration while in the planning stage and below are the following; all species to be mixed had to be with relating habits or behaviors for example let us mention about the feeding habits of animals to be integrated into a mixed specie enclosure “**all herbivorous**” where we expect to have grazers and browsers , among these we would have selective feeders and bulk feeders such that when the selective feeders eat their part the bulk feeders finish all the remaining presented food. So here there is no wastage of feeds.

Another strategy we considered was having all animals in this collection “**as diurnals**” because this could help us to do day observations where animals were free to exercise their nature behavior during day time and when we go in the night these animals were resting too. So you can imagine if we also had nocturnal animals it would have been difficult to provide them with appropriate requirements separate from the diurnals.

More consideration was emphasized to the introduction of animals to have **similar age groups** or **life stages** in this strategy we looked at the fact that if there was to be hierarchism among the introduced species, then this would be reducing the potential for the dominant interactions from larger or older species that is if there was to be any chance to create a rank-order within the enclosure.

Like what I have mentioned earlier, most of the ecological **minimum requirements** are shared by all individuals in a mixed specie enclosure setting so this calls for competition for resources among individual species. These ecological resources involve Space, Enclosure environment, Drinking water, Food among others.

Space; This is also among the minimum requirement of a mixed specie enclosure where we considered the minimum area or space that each animal comfortably occupy in relation to the set standards and since these animals are living together the one with the highest area.

Prophylaxis; Preventive medicine is helping much to keep our animals located in the mixed specie enclosure and this is termed as prophylaxis, we always mix this in the first food fed to our animals in small quantities and among these we have copper care, multivitamin and so many others.

Interspecies resource competition control; There were a number of husbandry practices that we have put forward to reduce the competition among individual species like for example competition for presented food was number one challenge to control and here we had to present food in different feeders at the same time to all animals in this enclosure. This worked very well because at least all animals had access to presented food however animals that are very slow to pick up food like the Ostriches were greatly affected due to the fact that other animals finishing their share, would come looking for anything remaining from other animals by pushing them off the presented food these probably were the Zebras and Giraffes.

For the Zebras it has been quiet easy to isolate them in the small confinement that we made with concrete substrate then with the Giraffes we designed a feeder trough basically for the Ostriches that has metal bars 20cm and 19 cm spaced to cover and prevent the Giraffes from reaching the food for Ostriches. To our

surprise the Giraffes were well adapted to getting food 50cms away from their mouth parts using their long tongue so this was easy still they managed to chase away Ostriches and eat their food after finishing their share. The best control method was to create a barrier that only Giraffes could not reach then other animals could also not stand high to reach this hanged feeder trough, this made Ostriches free from feeding competition. All other animals were feeding freely without any competition.

Water points are established in specific areas of the enclosure, of which some have falls that helped to cool the temperature of water as it falls continuously. This water is placed at different heights that can enable easy reach of all species whenever they felt like Drinking.

Competition for breeding sites and mothering areas is handled in a way that, if it were a small animal like the Rhim Gazelle OR Fallow Deer with a normal birth, then there would arise a challenge of neonates imprinting the big animals that were aggressively stamping them to death because of excitement, so what we did for such cases was to remove the young either for hand raising or divert the big animals with food as we place the young in a safe place within the enclosure. Eventually if all failed then we would remove both the mother and neonate to the quarantine for proper mothering of the young until it is fully weaned. With birds like the guinea fowls we would make nesting areas but the zebras plus giraffes would eat up all the nesting materials “hay” so we resorted to saw dust that could not be eaten by any other animal.

Shelters are constructed to cater for all the species putting in mind that some animals could not stay together with other species during resting times in this enclosure take for example the Ostriches never wanted to take same shade with the crowned cranes because they would poke them so they always kept away under tree shades just to avoid mock fights.

Reducing the stereotypic behavior; Stereotypes may develop from situations in which animals experience unavoidable stress or fear, barren environments, or lack of opportunities to fulfill appropriate activities for a specific specie. These behaviors may not reflect current conditions, but remain from past experiences. Also animals exhibiting stereotypic behavior may actually be better at coping with environmental stressors than those exhibiting no stereotypes. Majority of the abnormal behavior found with the animals in this enclosure of mixed species are associated with the well-being of these animals happening to be reduced to minimum and this is managed at Emirates Park Zoo by using a variety of enrichment practices both food and environmental enrichments among others. Generally stereotypic behaviors can be reduced when we increase captive animal behavior diversity and this is the best way we can evaluate the effectiveness of our enrichment practices. One risk involved in enrichment programs is that if they are not carefully planned, implemented, and evaluated periodically, managers may rely too heavily on the “**status quo**” and become complacent.

4. Conclusion; since all living organisms exist in communities made up of different plants and animals, modern zoo managers should increasingly combine species to create a more realistic, natural experience for their animals and a more exciting one for zoo visitors.

Mixed-species exhibits provide an interactive and dynamic experience for the animals, visitors and Zoo staff. The animals are provided with enrichment through species interactions. Visitors learn from observing these interactions and enjoy increased activity levels in the exhibits. Zoo staff is challenged with team management of exhibits which may include mammals, birds, reptiles and plant life.

ICZ 2018 Theme; “Thinking *Today Keeping Tomorrow*”.