There is a large number of species existing in the world; each year, however, the number of the endangered ones rapidly increases. Nowadays, captive breeding becomes an option for their survival in refugees. Sufficient population with satisfactory breeding management gives hope for survival to the endangered species (in mid-term) or even possible future reintroduction to their natural habitat. WAZA is currently the world's leading association of worldwide zoos and similar breeding facilities. Because these institutions operate as a network to facilitate the exchange of reared individuals, for conservation purposes, their captive populations may be seen as one large population characterized by its size, i.e., the total number of individuals. Such view is currently recognized by many conservationists as the so-called concept of Noah's Ark. The space on the Ark is limited, therefore it is needed to heed the characteristics of the species aboard to maximize the conservation potential. Many factors influence the presence of species in zoological gardens. Following previous studies we selected some factors that may be important, i.e., body lenght, taxonomy, and IUCN status. Analysis of these factors among the main reptile clades shall reveal the pattern of reptile composition in worldwide zoos. One of the factors to determine the proportion of species kept in zoos that is often mentioned in similar studies is human aesthetic preference (visually perceived "beauty"). It is therefore important to analyze the reptiles in terms of "beauty" as perceived by human respondents and to assess how is the reptile clade perceived as a whole. A thorough analysis will allow us to determine, which animal characteristics are perceived as "beautiful". Following the results of this study, we will be able to conduct another, more detailed analysis of the relationship of worldwide reptile zoo collection and the visual aesthetic preferences as perceived by human respondents.