**Introduction**

In the fictional television series Game of Thrones, based on the series of epic fantasy novels A Song of Ice and Fire, three dragons are raised by Daenerys Targaryen, the “Mother of Dragons.” Our team is assigned to analyze dragon characteristics, behavior, habits, diet, and interaction with their environment. The main question is:

What is the ecological impact and requirements of the dragon?

1. What are the energy expenditures of the dragons?
2. What are their caloric intake requirements?
3. How much area is required to support one dragon?

**Methods**

- Exponential growth for length
- Logistic model for length with the dragon data from exponential growth equation.
- Applied existing models for similarly sized organisms for:
  - Energy expenditure
  - Caloric intake
  - Area

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**Results**

1. The energy expenditure for Indian elephant is $5.4 \times 10^5$ kJ/d weighing at 3.67 t (McNab, 2012). Mammals have a greater amount of energy expenditure than ectotherms due to the cost of generating their own heat. Therefore, we know that the energy expenditure for 3,000 kg dragon is less than $5.4 \times 10^5$ kJ/d.

2. The caloric intake for one dragon is 4,602.74 kCal per day which sums to 75 meals per year.

3. Figure 4 is used to calculate the area needed for a dragon. The area for a dragon is at minimum 3,300 m x 4,500 m, as shown in Figure 5.

**Conclusions**

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**Literature cited**


