Too Many Turkeys  ??

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Sand Canyon Pueblo (Late P III, AD 1250-1280)

Goals of the Study

- Describe increase in turkeys and decrease in artiodactyls in Central Mesa Verde area in P III times (AD 1150-1280)
- Weight NISP counts by protein yield to assess food value of 5 animal groups
- Compare food value of turkeys and artiodactyls in 4 periods (P I, Early-Mid P III, Late P III, P IV)
- Estimate costs (in extra maize) of raising turkeys for food
- Consider impacts of producing extra maize on P III economy and society
Faunal assemblages analyzed. Goodman Point group includes GP Hamlets, Shields Site, and GP Pueblo.
In the late P II and P III periods, turkey raising increased as deer were depleted in the vicinity of villages, and warfare made long-distance hunting hazardous.
<table>
<thead>
<tr>
<th>Animal Group</th>
<th>Edible Meat Weight</th>
<th>Protein Yield g/kg</th>
<th>Weighting Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artiodactyl</td>
<td>36 kg</td>
<td>300 g</td>
<td>10800</td>
</tr>
<tr>
<td>Lepus</td>
<td>1.38 kg</td>
<td>330 g</td>
<td>455</td>
</tr>
<tr>
<td>Sylvilagus</td>
<td>0.6 kg</td>
<td>330 g</td>
<td>198</td>
</tr>
<tr>
<td>Meleagris (Turkey)</td>
<td>4.13 kg</td>
<td>290 g</td>
<td>1198</td>
</tr>
<tr>
<td>Sciurids</td>
<td>0.56 kg</td>
<td>300 g</td>
<td>168</td>
</tr>
</tbody>
</table>

Weighting NISPs by protein yield is a way to compare the food value of various animals in a faunal assemblage (e.g., 10 cottontail bones = 10 x 198; 10 turkey bones = 10 x 1198)
Effects of protein weighting on assemblage percentages of five animal groups at a single site.
Comparison of P I (AD 800s) with Early-Mid P III assemblages (AD 1150-1250) shows the shift to turkeys as an important food resource.
Late P III refuse deposits show even higher turkey use, but other deposits don’t. P IV sites in the Northern Rio Grande show a return to dominance of artiodactyls.
How Many Food Turkeys Were Required at these sites?

- Protein-weighted NISPs indicate percent animal protein from turkey

- Two levels of human need for animal protein compared:
  - 5 g/person/day and 10 g/person/day

- If assemblage is 50% turkey, the 5 g level requires 2.5 g/person/day of turkey protein; twice that at the 10 g level

- Adult turkey yields 1198 g usable protein

- 5 g target: 2.5 g x 365 days = 912.5 g turkey protein = 0.76 turkeys/pers/yr

- 10 g target: 1825 g from turkeys = 1.5 turkeys/pers/yr
Additional maize required at estimated levels of turkey consumption (we estimate each turkey requires 44 kg of maize per year and each human requires 187 kg)
Conclusions:

• P III sites in the CMV had an unusually high reliance on domestic turkeys
• Producing extra maize for turkeys imposed significant costs and risks on CMV communities in the AD 1200s
• The 5 g/pers/day target for animal protein is more realistic for P III than a higher target
• Relocation of CMV populations to the N Rio Grande permitted a return to artiodactyls as the primary source of animal protein

(Thanks to Catherine Gilman for drafting key graphics)