It is a long-lasting question whether birds are able to choose a breeding territory that will later on have most food for nestlings. With our experiment we tried to find out what kind of territories pied flycatchers (Ficedula hypoleuca) prefer and in what kind of territories their breeding success is best. We had nest-boxes in two forests, with both coniferous and deciduous trees, in Turku, south-western Finland in 2008. In one study area we followed the territory choice of males (29 territories) and in another territory choice of females by randomizing male and territory quality (27 territories) [1,2].

From each territory we calculated the characteristics of the forest and abundance of arthropods:
- forest type (from lush to barren)
- volume of wood
- amount of bushes
- proportion of deciduous trees
- arthropod numbers from air, ground and trees

Dependent variables:
- male territory choice
- female territory choice
- laying date
- egg number
- nestling condition
- fledgling number

Analysed models:
model 1 = all
model 2 = ants, other ground arthropods, flying insects, leaf area removed, aphids
model 3 = forest type, bushes, volume of wood, deciduous trees
model 4 = ants, other ground arthropods
model 5 = leaf area removed, aphids
model 6 = flying insects
model 7 = forest type, deciduous trees
model 8 = bushes, volume of wood

Table. The $\Delta$AICc values for different models (see above). The values marked with red have combined at least 0.90 cumulative Akaike weight ($w_i$).

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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</thead>
<tbody>
<tr>
<td>Male choice</td>
<td>19.68</td>
<td>10.33</td>
<td>4.94</td>
<td><strong>1.73</strong></td>
<td>1.56</td>
<td><strong>0.00</strong></td>
<td>0.81</td>
<td>2.22</td>
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<tr>
<td>Female choice</td>
<td>19.06</td>
<td>10.75</td>
<td><strong>2.52</strong></td>
<td>1.37</td>
<td>3.02</td>
<td><strong>0.00</strong></td>
<td>2.63</td>
<td><strong>0.59</strong></td>
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<tr>
<td>Laying date</td>
<td>16.43</td>
<td>7.08</td>
<td>6.41</td>
<td><strong>2.23</strong></td>
<td>0.68</td>
<td><strong>0.00</strong></td>
<td>2.44</td>
<td>1.24</td>
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<tr>
<td>Egg number</td>
<td>13.33</td>
<td>3.10</td>
<td>7.38</td>
<td><strong>0.92</strong></td>
<td><strong>0.00</strong></td>
<td>1.14</td>
<td>3.98</td>
<td>2.87</td>
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<tr>
<td>Nestling condition</td>
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<td>10.74</td>
<td>3.21</td>
<td><strong>2.44</strong></td>
<td>2.49</td>
<td><strong>0.00</strong></td>
<td>0.11</td>
<td>1.87</td>
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<tr>
<td>Fledgling number</td>
<td>13.50</td>
<td>3.21</td>
<td>8.24</td>
<td><strong>0.00</strong></td>
<td>3.54</td>
<td>1.49</td>
<td>3.25</td>
<td>4.98</td>
</tr>
</tbody>
</table>


Results
There was considerable model uncertainty. In most cases the best models seem not to be particularly good (low $R^2$ values). Thus males or females do not seem to choose territories that would later have most food for the nestlings. There was however some evidence that the number of fledglings depends on the number of flying and ground arthropods.

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