MEDIEVAL DEMOGRAPHICS IN BRIEF

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INTRODUCTION

When I'm developing a wilderness map, I always have to decide, "At what frequency should I place villages, cities, and castles here?" This document attempts to provide a "baseline" solution, that is, a historical average for the start of the European High Middle Ages period. In large part, we look to England as archetypal, and use the works of Joseph and Frances Gies, *Life in a Medieval Village/Castle/City*, as a starting point. At the end we consider how this has or can be modified in the fantasy medieval setting.

MAP SCALE

We broadly assume that the scale of one's fantasy maps includes a campaign-level scale at around 24 miles per hex, and strategic-level maps at around 6-miles per hex. [1] Smaller scale than this is usually not found to be useful. Note that a 24-mile hex is close to 500 square miles in area, while a 6-mile hex is around 30 square miles.

OVERALL DEMOGRAPHICS

In the Middle Ages, the population of England fluctuated between about 2 and 5 million. This started on the low end around the time of the Norman invasion and the Domesday Book in 1086; grew to the high end in the 13th and early 14th centuries; collapsed back down after the Black Death; and then rise back up in the 17th century. [2]

The area of England is close to 50,000 square miles. [3] If we assume the low end of the population range for our game, then we get an average of around 40 people per square mile (2M/50K). For comparison, estimates of population in the Dark Ages run at about half that. [4] One writer estimates population in 5th century England and Germany at around 10 people per square mile. [5]

VILLAGES

The average village size can be assumed to be on the order of 100-600 people (average around 350). [6] Per household there are around 5 people, with around 3 fit for labor. [7] Around 90% of the medieval population lived in villages. [8] Given the low-level population for England, we can estimate that the country had around 5,000 villages (2M × 0.9 / 350) . **This works out to about one village per 10 square miles (50K/5K) ; on average there should be: 3 villages per 6-mile hex, or 50 per 24-mile hex.**

In regards to area of the village itself, plowed fields were measured in "hides", roughly 120 acres each; Elton with its 500-600 people was assessed at 10 hides (including a church and two mills, for a tax of 14 or 16 pounds). [9] This area of some 1,200 acres is about 2 square miles; on average we see one "hide" per 50 people or so. [10]

A short comment on village leadership: The lord directly controls as his *demesne* about one-quarter of the village fields, villagers the rest. [11] But the lord is likely not in residence (see Castles, below). A *steward* (seneschal) likely visits a few days a year; this person is most often a knight (or cleric for a lord abbot). The immediate manager is a *bailiff*, acting as chief law officer, business manager, and representative, living in the local manor house (likely the only stone building). Accounts were held by a villager acting as the *reeve*. [12]

CASTLES

The *Castellarium Anglicanum* lists over 1,500 castle sites in England, many entirely vanished. One list of at least partly-visible remaining castles lists about 800, with over 300 having substantial stone remains. [13] Gies says that while at the time of the 1066 invasion, there were only 6 effective castles in England [14], within the 12th century there were over 500 stone castles. [15] **Using the latter figure as our estimate, we get one castle per 100 square miles or so (50K/500) – one per 3 6-mile hexes, or about 5 per 24-mile hex.**

The lord of the castle is likely a baron (or earl, abbot, etc.), holding the land in several villages in the name of the king. He sits on the king's council when summoned (attending to his own self-interest, of course), and also likely jockeys for other enriching government positions (such as justiciar, chancellor, marshal, sheriff, etc.). High justice is likely reserved only to yet higher lords (kings, dukes, bishops, etc.). In return for the fief, the lord owed military service, possibly with some number of mounted knights; perhaps 40 days per year, or else a money payment in its place. [16]

CITIES

Here we consider specifically walled urban enclosures. The Domesday Book listed over 100 settlements as "boroughs". The poll tax of 1377 indicated at least 30 towns of population 1,440 or more. One list gives about 70 towns that had walls in medieval England. [17] This would give about one walled town per 700 square miles (50K/70). **Say in round numbers that there is about one walled town per 1,000 square miles; thus there could be one every 30 6-mile hexes, or one every two 24-mile hexes.**

Cities commonly had an area of some 100 to 300 acres. [18] Population ranged from 2-3K (which we may call towns) to 10-20K or more (which we may refer to as proper cities). The largest capital cities of Northern Europe were 10-50K; in Southern Europe the size could be 25-100K. [19] All such urban areas had strong walls, abbeys, monasteries, and churches; many had canals, bridges, piers, and the palace of a secular prince. [20]

Most of the walled towns listed for England above had populations of between 1,000 and 3,000; only the top 8 have numbers over 3,000; London was the largest with around 25,000 (in fact, the only one over 10K). [21] The populations of the towns given closely tracks a power-curve distribution. [22] Extrapolating from this distribution, we find that the average population of these towns should be around 2,000 people (ranging from 750 people upwards).

Rulership of cities was being transitioned to "communes", towns self-run by merchant guilds, electing a mayor, with a signed charter from the prince releasing them from feudal obligations and courts (but paying over a regular sum of money; a new and revolutionary idea). [23] Towns were sacked with some regularity, with invaders carrying off their valuable treasures. [24]

To summarize this section, we have found that, very roughly speaking, in 11ᵗʰ-12ᵗʰ century England, there was about one village per 10 square miles, one castle per 100 square miles, and one city per 1,000 square miles. We note, on average (perhaps thinking of the area around St. Ives): for every city there are 10 castles, and for every castle there are 10 villages.

COMPARISON TO D&D SOURCES

The preceding are actually based on data from historical sources. Here we compare to what we find in various D&D sources. We find a general trend of Gygaxian populations being less dense by an order of magnitude (that is, about 10 times the area per feature unit). For example:

1) The Wilderness rules in OD&D Vol-3 use the *Outdoor Survival* map for a basis, at a given scale of 5 miles per hex, giving a total area of about 30,000 square miles (60% the size of England). Historically, this area should have some 30 cities and 300 castles. But the map only gives 9 towns (cabin icons) and 24 castles (catch-basin icons). So: the OD&D Outdoor Survival map is between 3 to 12 times less dense (compared to England at the start of the High Middle Ages). [25]

2) Likewise, the OD&D Vol-3 rules for Baronies suggests that territory up to 20 miles from one's stronghold may be cleared, containing 2-8 villages. Assuming a maximal circular area, this would be about 1,200 square miles; and historically, such an area should have some 120 villages. So the barony rule is approximately 24 times less dense than medieval England. [26]

3) If we look at the *World of Greyhawk* map, a similar low density is found. We refer to Chris Kutalik's math for the central state of Veluna, in which he found a population density of about 5 persons per square mile. This is, again, about 8 times less dense than medieval England (and even less than the lowest estimate at the lowest point in the Dark Ages). [27]

On the other hand, the populations ascribed to urban units are at least roughly correct on a historical basis. In OD&D Vol-3, the villages under Baronies are stipulated as having a population of 100-400 (compare to our finding of 100-600 above) [28]; however, later AD&D works called a community of this size a "hamlet", and asserted that a proper "village" was larger, from 600-900 people (a match for only 10% of villages per Hilton). [29] Note also that the 100-600 number is roughly the same as a standard group of men, dwarves, elves, goblins, orcs, etc. [30]

Gygax gives the population of towns as from 1,500-6,500, and cities proper as 10,000-60,000.[31] (This compares favorably to our findings of Gies of 2-3K for towns and 10K-50K for the largest cities in Northern Europe).

CONCLUSIONS AND RECOMMENDATIONS

Of course, in the real world only human societies exist, while in the fantasy world we have many other races (dwarves, elves, orcs, goblins, trolls, giants, etc.), both holding their own territory and contending with men. Perhaps we can begin by assuming that humans mostly have dominion only in plains areas, with most areas of woods, mountains, desert, swamp, etc., given over to various nonhuman races and monsters. (Perhaps when men control woods or swamps, they are felled and drained for farmland, as was done in medieval times.)

This author currently finds it useful to take a point about halfway between historical sources and Gygaxian scarcity, at a density of about one-quarter that of England at the start of the High Middle Ages. We might describe this as "Dark Ages total density, High Middle Ages urbanization." Or in other words, in human-controlled lands, there is a density similar to the start of the High Middle Ages, but those human-controlled lands encompass only about one-quarter of the campaign map (the other areas held by various nonhuman monsters).

On the scale of a 6-mile hex map, we place the cities, towns, and castles, keeping mostly to the plains areas as noted. We assume roughly that for every castle, most adjacent hexes have between 1 and 3 villages in fief, but these are not shown on the map. We emphasize that it makes no sense to show individual villages at this scale, as historically there should be several in every hex; so we abstract them away, and assume they usually have no amenities of use to PCs like inns, taverns, or general stores. [32]

We interpret this state of affairs by saying that, in the face of roaming monstrous threats, human settlements huddle close to defensible fortifications, from whence a runner or rider can summon help in about an hour. It is reasonable at this scale for light-mounted patrols from the castle to range 1 or 2 hexes away on a daily basis. [33] It's also reasonable that every remaining hex could have some monstrous lair (perhaps not easily found). For this arrangement to make sense, the stone fortifications need to be nigh-invulnerable to any standard monsters in the wilderness [34]; but the monsters themselves must be too tough, numerous, or inaccessible for the men to entirely take their territory. Overall, this makes for attractive and gameable maps, with plenty of space for exploration and monsters.

In total, we use a series of map scales that run something like this: [35]

1) Level 1: 100-mile hexes, showing capital cities (1 per 30 hexes).
2) Level 2: 24-mile hexes, showing walled towns (1 per 8 hexes).
3) Level 3: 6-mile hexes, showing baronial castles (1 per 12 hexes).
4) Level 4: 1½-mile hexes, showing individual villages (near castles).

Note that, on average, at Level 1 there is one walled town per hex; at Level 2 one castle per hex; at Level 3 one or more villages per hex (adjacent to any castles), and therefore these features are not actually depicted at those scales.

Generally level 3 is intended for wilderness exploration; level 4 is currently used only for small-scale introductory adventures. (The former is, of course, in the

spirit of Vol-3 and Outdoor Survival; PCs can cross one page in the latter scale in but a single day or two.) While this author is incessantly desirous of having league-scale hexes for descriptive and movement purposes (between level 3 and 4), we sadly find that it is not feasible on reasonably-sized paper to show an area large enough for wilderness exploration adventures. [36]

Regarding urban area populations, we find that it is simplest to assume the following (or convert to a d10 basis if you don't want any categorical gaps);

1) Villages: 100-600 (d6 × 100) people.
2) Towns: 1,000-6,000 (d6 × 1,000) people.
3) Cities: 10,000-60,000 (d6 × 10,000) people.

FURTHER RESEARCH

In regards to the radically lower overall populations given by Gygax, we might ask a larger question: What do other sources of fantasy say in this regard? This might be a much trickier question to answer (i.e., less likely to be quantified in the original source), but this author would hypothesize that similar implications are made in a wide range of fantasy literature (for example: one major city ascribed to a territory that in reality would have many; the need for narrative focus reducing such areas precipitously; and so forth).

1. At the large scale, the D&D Expert modules used 24-miles per hex, and Greyhawk 30-miles per hex. At the smaller scale, OD&D Vol-3 assumed 5-mile hexes, D&D Expert rulebook 6-miles, and D&D Trail Maps products 8-miles. We do like having one be an integer multiple of the other (so: 24 and 6 miles). The 6-mile unit can historically be called a "große Meile" or "great mile".
2. [Wikipedia: Demography of England](#).
3. [Wikipedia: England.](#)
4. [Wikipedia: Early Middle Ages](#)
5. Gies, *Life in a Medieval Village* [LMV], p. 13; citing Chapelot and Fossier. Specifically, the estimate is 2-5 persons per square kilometer, equivalent to an interval of 6-15 people per square mile.
6. Gies, LMV, p. 42: cites Hilton as saying 45% were below 400, 45% between 400 and 600, and 10% larger.
7. Gies, LMV, p. 42: Elton in the 13th century was a "large village" with a population of 500-600, 113 heads of families, and 327 laborers at harvest. The earlier Domesday Book implies around 6 persons per family (275K heads of families, total population of 1.5 to 2 million), p. 30.
8. Gies, LMV, p. 1.
9. Gies, LMV, p. 30-31.
10. This author sometimes uses SimCity classic, at a presumed medieval scale of 30' per small space; at 120 × 100 spaces the total map area is then about 10M square feet = 250 acres = two "hides", that is, planted fields to support around 100 people.
11. This general ratio seems to play out at larger scales, as well: William the Conqueror held about one-fifth of all England as his personal territory (Gies, *Life in a Medieval Castle*. p. 33).
12. Gies, LMV, p. 44-57.
13. [Wikipedia: List of castles in England.](#)
14. Gies, *Life in a Medieval Castle* [LMCa], p. 9.
15. Gies, LMCa, p. 20.
16. Gies, LMCa, Chapter 2. Note that in Charlemagne's time one knight needed the support of 300 to 600 acres, with about a hundred peasants farming it.
17. [Wikipedia: List of town walls in England and Wales](#). 76 total towns are listed; by this author's count, 7 are in Wales, leaving 69 in England proper.
18. Gies, *Life in a Medieval City* [LMC], p. 15 (upper end given as about a half square mile). In the 5th century, Troyes covered only 40 acres and "a few score hovels" (p. 4). By 1250 it covered some 600 × 1200 meters, that is, 180 acres (taken from online map at [planetware.com](#), which matches and gives scale of map in Gies).
19. Gies, LMC, p. 21. This compares favorably to the given AD&D DMG city size of 10-60K.
20. Gies, LMC, p. 15.
21. [Wikipedia: List of towns and cities in England by historical population](#). Also: Gies, LMC, p. 21.

22. Analysis performed by this author; $R^2 = 0.96$.
23. Gies, LMC, p. 17-18.
24. Gies, LMC, p. 5-6: Troyes was sacked either 2 or 3 times in the Viking era.
25. OD&D Vol-3, p. 17 and the Outdoor Survival map.
26. OD&D Vol-3, p. 24. AD&D DMG gives a similar nominal size to cleared baronies of 30-miles radius (p. 93).
27. Chris Kutalik's blog at the [Hill Cantons]. Other examples might be the wilderness map in T1-4 (2 villages in 1,200 square miles, about 60 times less dense than history), and B2 (no villages in about 6 square miles along a river).
28. OD&D Vol-3, p. 24.
29. AD&D DMG, p. 173; and *World of Greyhawk*. On the other hand, Gygax's *Village of Hommlet* has roughly 240 inhabitants.
30. Given as 30-300 or 40-400 for each of these types, plus women and children, in the AD&D *Monster Manual*.
31. AD&D DMG p. 173 & Greyhawk.
32. For example, in the treatise on the large village of Elton in Gies, LMV, we find no mention of any such amenities.
33. See OD&D Vol-3, where this is the range for encounters from castle inhabitants. See DMG p. 182 for a description of patrols mostly on riding horses.
34. Gies, LMCa, p. 188: "Such a castle... was practically proof against direct assault".
35. The ratios noted are in relation to all land hexes, even though placement is mostly in plains hexes. We find it easier to account this way.
36. Consider: A standard piece of graph or hex paper, at 4 spaces per inch, is about 30 × 40 spaces total. The Outdoor Survival map, zoomed up for boardgame play, is a similar 34 × 43 hexes. At 3-miles per hex, such a map would only be about 100 miles across (two days travel by light riding horse).