

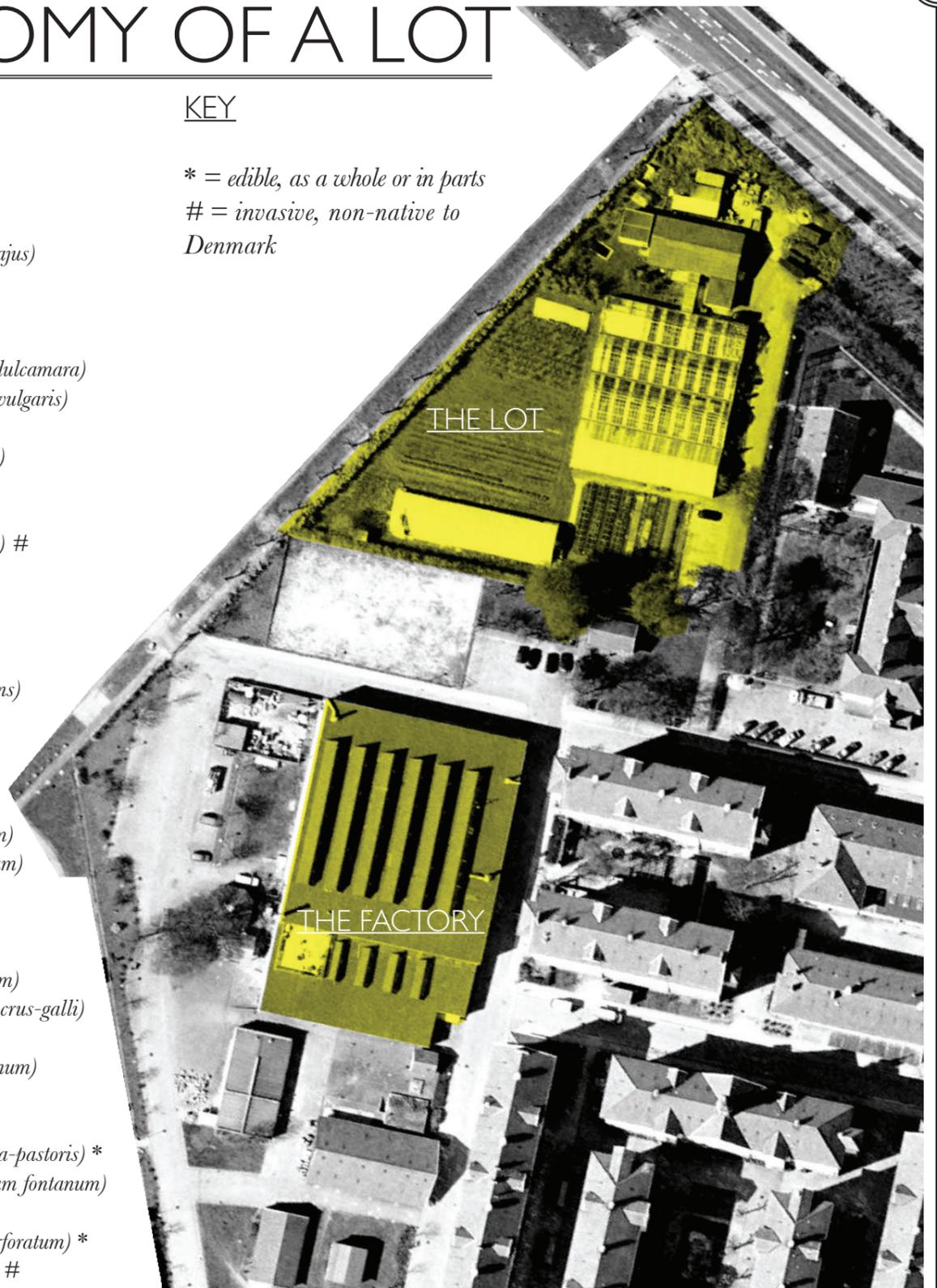
A BRIEF TAXONOMY OF A LOT

PLANT AERTER/PLANT SPECIES

1. Aftenpragt stjerne/White Campion (*Silene latifolia*)
2. Ager-sennep/Wild mustard (*Sinapis arvensis*)
3. Ager-Stedmoderblomst/Field pansy (*Viola arvensis*)
4. Almindelig Svaleurt/Greater Celadine (*Chelidonium majus*)
5. Ahorn/Maple (*Acer*) *
6. Amarant/Red amaranth (*Amaranthus hybridus*)
7. Bonderose/European peony (*Paeonia officinalis*)
8. Bittersød natskygge/Bittersweet nightshade (*Solanum dulcamara*)
9. Brandbæger, almindelig/Common groundsel (*Senecio vulgaris*)
10. Burre-Snerre/Stickyweed (*Galium aparine*)
11. Butbladet Skræppe/Broadleaf dock (*Rumex obtusifolius*)
12. Bøg, almindelig/Common Beech (*Fagus sylvatica*)
13. Bånd pil/Common Osier (*Salix viminalis*)
14. Canadisk bakkestjerne/Horseweed (*Conyza Canadensis*) #
15. Cikorie/Chicory (*Cichorium intybus*) *
16. Draphavre/Tuber oat grass (*Arrhenatherum elatius*)
17. Dunet Dueurt/Willowherb (*Epilobium parviflorum*)
18. Fersken-Pileurt/Redshank (*Persicaria maculosa*)
19. Firling, almindelig/Birdeye pearlwort (*Sagina procumbens*)
20. Fløjlgræs/Velvet grass (*Holcus lanatus*)
21. Gaffel vortemælk/Radium weed (*Euphorbia pepus*)
22. Gærdekartebolle/Wild teasel (*Dipsacus fullonum*)
23. Gærde-snerle/Larger Bindweed (*Calystegia sepium*)
24. Gederams/Rosebay willowherb (*Epilobium angustifolium*)
25. Glat Dueurt/Broadleaf willowherb (*Epilobium montanum*)
26. Gold byg/False barley (*Hordeum murinum*)
27. Gold hejre/Barren brome (*Anisantha sterilis*)
28. Grå Bynke/Common wormwood (*Artemisia vulgaris*)
29. Grøn gåsefod/ Swedish goosefoot (*Chenopodium suecicum*)
30. Hanespore-Hvidtjørn/Cockspur hawthorn (*Crataegus crus-galli*)
31. Haremad, almindelig/Nipplewort (*Lapsana communis*)
32. Hestekastanie/Horse chestnut tree (*Aesculus hippocastanum*)
33. Hunde-rose/Dog rose (*Rosa canina*)
34. Hvidtjørn/Midland hawthorn (*Crataegus laevigata*)
35. Hyrdetaske, almindelig/Shepard's purse (*Capsella bursa-pastoris*) *
36. Hønsetarm, almindelig/Common mouse-ear (*Cerastium fontanum*)
37. Høst-borst/Autumn hawkbit (*Leontodon autumnalis*)
38. Kamille, lugtløs/Wild chamomile (*Tripleurospermum perforatum*) *
39. Kæmpe pileurt/Giant knotweed (*Fallopia sachalinensis*) #
40. Katost, almindelig/Common mallow (*Malva sylvestris*) *
41. Katost, rundbladet/Roundleaf mallow (*Malva neglecta*)
42. Kløver, gul/Hop trefoil (*Trifolium campestre*)
43. Kløver, hvid/White clover (*Trifolium repens*)
44. Kløver, rød/Red clover (*Trifolium pratense*)
45. Kirtel kortstråle/Fringed quickweed (*Galinsoga ciliata*)
46. Kryb-hvene/Creeping bentgrass (*Agrostis stolonifera*)
47. Kvik, almindelig/Couch grass (*Elytrigia repens*)
48. Kællingetand, almindelig /Bird's foot trefoil (*Lotus corniculatus*)
49. Lammeøre/Lamb's ear (*Stachys byzantine*)
50. Lavendet/Lavender (*Lavandula*)
51. Liguster/Wild privet (*Ligustrum vulgare*)
52. Løgkarse/Garlic mustard (*Alliaria petiolata*)
53. Lådden dueurt/Hairy willowherb (*Epilobium hirsutum*)
54. Mur-gipsurt/Soapwort (*Gypsophila muralis*) *
55. Mur-sennep/Annual wall-rocket (*Diplotaxis muralis*)
56. Mynte/Mint (*Mentha*) *
57. Mælkebøtte/Dandelion (*Taraxacum*) *
58. Padderok, ager-/Field horsetail (*Equisetum arvense*)
59. Perikon, prikbladet/St. John's Wort (*Hypericum perforatum*)
60. Pyrenæisk storkenæb/Meadow cranesbill (*Geranium pyrenaicum*)
61. Rajgræs, almindelig/Ryegrass (*Lolium perenne*)
62. Rapgræs, almindelig/Rough-stalked meadow grass (*Poa trivialis*)
63. Rapgræs, enårig/Annual meadow grass (*Poa annua*)
64. Rørhvene, bjerg- /Wood small-reed (*Calamagrostis epigejos*)
65. Rød Sankthansurt/Witch's Money Bags (*Hylotelephium telephium*)
66. Sildig gyldenris/Giant goldenrod (*Solidago gigantea*) #
67. Skovranke, almindelig /Traveller's joy (*Clematis vitalba*)
68. Skvalderkål/Ground-elder (*Aegopodium podagraria*)
69. Snebær, almindelig/Common snowberry (*Symphoricarpos albus*)
70. Sneglebælg, humle/Black Medic (*Medicago lupulina*)
71. Snerle pileurt/Black bindweed (*Fallopia convolvulus*)

KEY

- * = edible, as a whole or in parts
= invasive, non-native to Denmark



72. Stenurtfamilien/Orpine family (*Crassulaceae*)
73. Stedmoderblomst, almindelig/ Common Heartsease (*Viola tricolor*)
74. Stor nælde/Common nettle (*Urtica dioica*) *
75. Sumpevighedsblomst/Marsh Cudweed (*Gnaphalium uliginosum*)
76. Svinemælk, almindelig/ Daisy family, sow-thistle (*Sonchus*)
77. Svingel, rød/ Red fescue (*Festuca rubra*)
78. Tadder-vikke/Smooth vetch (*Vicia tetrasperma*)
79. Tidsel, ager/Creeping Thistle (*Cirsium arvense*)
80. Tidsel, horse/Spear Thistle (*Cirsium vulgare*)
81. Tusindfryd/Common Daisy (*Bellis Perennis*)
82. Valmue/Poppy (*Papaver*)
83. Vejbred, glat/Greater plantain (*Plantago major*)
84. Vejbred, lancet-/Ribwort plantain (*Plantago lanceolata*)
85. Vejpileurt/Common knotgrass (*Polygonum aviculare*)
86. Ærenpris, tveskægget/Germander speedwell (*Veronica chamaedrys*)

FUGLENE/BIRDS

1. Blåmejse/Blue Tit (*Cyanistes caeruleus*)
2. Gråkrage/Hooded Crow (*Corvus cornix*)
3. Husskade/Magpie (*Pica pica*)
4. Hvepsevåge/Honey Buzzard (*Pernis apivorus*) - migratory
5. Klippedue/Feral Pigeon (*Columba livia*)
6. Landsvale/Barnswallow (*Hirundo rustica*)
7. Mursejler /Swift (*Apus apus*)
8. Musvit /Great Tit (*Parsus major*)
9. Ringdue/Wood Pigeon (*Columba polumbus*)
10. Råge /Rook (*Corvus frugilegus*)
11. Stillits/Goldfinch (*Carduelis carduelis*)
12. Sølvmåge/Herring gull (*Larus argentatus*)

What happened in the lot...

The species list included on this poster is a qualitative count of a selected area near the Factory for Art and Design (Sundholmsvej 46) in Copenhagen, Denmark. The list was collected on 28 August and 4 September, 2011. Inger Kærgaard, biologist and environmental educator, Jørn Lennart Larsen, ornithologist at the Dansk Ornitologisk Forening (Danish Ornithological Society), and Camilla Sønderberg Brok, botanist, led the methodological management of this count. We made this count as a tool to think about ecology and biodiversity in an urban environment.



The lot was chosen for simple reasons—its proximity to the Factory for Art and Design and its overgrown appearance. The lot was, as recently as 2006, home to greenhouses for plant cultivation. Evidence of this can be found in the list of plant species. Though, the lot appears overgrown now, upon closer inspection, the visible species are closely related with the regular routines of human gardening, both for edible plants and ornamentals.

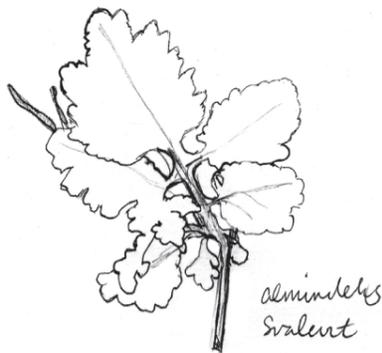


Before going into the field, I spoke with Inger, Jørn, and Camilla about various methods that they use to document species and why. Inger and Camilla, as biologists, have used similar methods when doing species counts. For Jørn, the ornithologist, typical methods for species counts involve time in

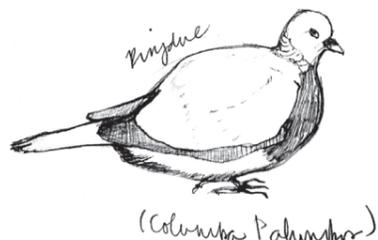
the methodological structure. Species counts are generally done to learn about the health of the animal, plant, and bird populations, as well as, the health of the environment. They are also done to develop an understanding of how humans affect the environment, and to develop scientific knowledge about species in the world.

Inger and Camilla related several different research methods to me, including the random frequency method. In random frequency, one selects a marker and throws it out into the area to be counted, thereby creating a random pattern. Then the researcher makes the species count around each marker location. Jørn, focusing on time, returns to selected areas year after year to mark what bird species are returning. In fact, Jørn is part of a special project. All of Denmark has been mapped into a grid of 5km x 5km and volunteer scientific researchers “adopt” a selected area to return to each year to document bird species diversity. There is a comparable grid system for gathering data on botanical life.

We had limited time and resources to make our species count. So, we chose to do a simple qualitative count—meaning how many species could we identify in a given period of time on a given day. To document and identify bird species, we used Collins Bird Guide (2009, HarperCollins), visual identification, and Jørn used his aural expertise. We discovered birds typical to the urban northern European environment, plus one migrating bird.



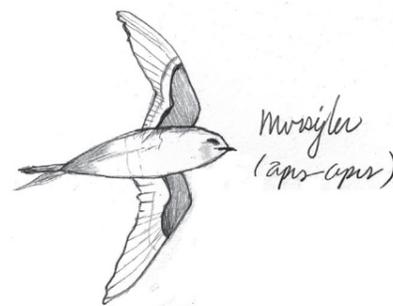
To document plant species, we used field forms from Denmark's Environmental Ministry. These forms are available from the organisation's website (www.naturstyrelsen.dk). They contain extensive lists of typical species in a given habitat, such as wetlands, grasslands, meadows, forests, or swamps. We identified our specific field habitat as an “overdrev,” or grassland and found several species typical to Denmark's grasslands. Some of the species we identified are invasive and others are indicators of human disturbance in the typical overdrev. We also identified several species not on the specific grassland list, those species closely related to those found in common household gardens.



An important part of my discussion with the biologists was the meaning of biodiversity. When initiating this project, I assumed incorrectly that finding a large number of different species would indicate biodiversity, and thus an ecologically healthy environment. I was especially interested in illustrating species diversity in urban environments. I thought this could be the first step in inspiring ecological thinking around everyday spaces, as opposed to exotic destinations like national parks, rainforests, or coral reefs. I found that it is possible to discover species richness in an urban setting, but what it actually means is a different story.



Defining biodiversity is not a simply counting the number of different species in a given location. In the science of ecology this is called, “describing a community in numerical terms,” and it is only one of many to describe a community. Biodiversity is more holistically about how these different species interact with each other—plants, animals, birds, and insects. It is about how species live, die, and what they do at different times of the year, such as mate, bloom, seed, sing, feed, hibernate, or migrate. Limiting one's research



methodology to describing a community in numerical terms ignores factors like time, area, and volume. There are, of course, methodologies that address these factors and contribute to a greater overall ecological understanding about the health of an environment. Ecology, simply put, means that everything affects everything else.

Human beings have a disproportionate effect on the environments we inhabit; we also create environments, like gardens, orchards, and farms. All of our activities have an effect on species diversity and the overall ecology of a particular place. To think ecologically is to think about the multiple connections and influences that are happening around us all the time. It is a complicated endeavour considering the myriad of species connections and interactions in the world. I started small in my efforts to think ecologically in a semi-abandoned lot, once a garden, in the middle of a city of around 1 million people. *-Bonnie Fortune*

Camilla's suggestions for increasing biodiversity in Denmark

I asked Camilla, the botanist, how biodiversity could be increased in Denmark. Denmark has a relatively manageable land mass and population of around 5 million people—not too big, not too populated. A place with these qualities could be a learning lab to cultivate ecological stewardship and biodiversity in relationship to the built environment. Denmark's land has also been well used, with the majority of the land farmed or forested. There is very little left in the way of wild space; most of the landscape has been influenced by human society and its needs. Camilla mentioned several things that could be changed or considered to improve biodiversity. They are:

1. Slow or stop industrial agriculture, especially the environmentally destructive effects of pig farming. Pig farming affects the number of species one might find in an abandoned city lot. In ecology everything is connected.
2. Fertilizer and pesticides have a negative effect on the soil and run off from farms has far reaching effects in the landscape.
3. Water retention in the the landscape by using less irrigation for building and agricultural projects.
4. Long term preservation of the landscape. Ask: “How will this building/ farm/ road effect biodiversity over time?”
5. Dedicating specific places to be set aside and preserved to cultivate available land for more species diversity to flourish.
6. Allowing animals to graze farmlands. Grazing livestock help control undesirable species in a habitat, such as a meadow or grassland, and encourage other species to flourish. Their eating habits are part of the overall ecological system. Additionally, people can help with this process by the old fashioned method of “haying,” reaping grasses with a scythe.