APPENDIX

CONVERSION FACTORS

What units of measurement should be used when writing about agriculture? Farmers use acres, bushels, tons, hundred-weight ... while the scientific community uses the metric system. This book is a bridge between the farmer and the scientist, between agriculture and wildlife, and I have chosen to use the traditional English units more often than metric ones. The conversion factors listed below will be useful when going from one system to the other.

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>To convert from:</th>
<th>To:</th>
<th>Multiply COLUMN A by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres</td>
<td></td>
<td>Hectares</td>
<td>0.404,686</td>
</tr>
<tr>
<td>Acres</td>
<td></td>
<td>Square meters</td>
<td>4,046.856,422</td>
</tr>
<tr>
<td>Acre-feet</td>
<td></td>
<td>Hectare-centimeters</td>
<td>12.335</td>
</tr>
<tr>
<td>Bushels (U.S.)</td>
<td></td>
<td>Cubic meters</td>
<td>0.035,239</td>
</tr>
<tr>
<td>Bushels (U.S.)</td>
<td></td>
<td>Liters</td>
<td>35.239,070</td>
</tr>
<tr>
<td>Cubic feet</td>
<td></td>
<td>Acre-feet</td>
<td>2.296 x 10**-5</td>
</tr>
<tr>
<td>Cubic feet</td>
<td></td>
<td>Liters</td>
<td>28.316,847</td>
</tr>
<tr>
<td>Gallons</td>
<td></td>
<td>Liters</td>
<td>3.785,412</td>
</tr>
<tr>
<td>Hectares</td>
<td></td>
<td>Acres</td>
<td>2.471,054</td>
</tr>
<tr>
<td>Hectares</td>
<td></td>
<td>Square feet</td>
<td>107,639,100</td>
</tr>
<tr>
<td>Kilograms</td>
<td></td>
<td>Pounds</td>
<td>2.204,623</td>
</tr>
<tr>
<td>Kilometers</td>
<td></td>
<td>Miles</td>
<td>0.621,371</td>
</tr>
<tr>
<td>Liters</td>
<td></td>
<td>Gallons</td>
<td>0.264,172</td>
</tr>
<tr>
<td>Meters</td>
<td></td>
<td>Yards</td>
<td>1.093,613</td>
</tr>
<tr>
<td>Miles</td>
<td></td>
<td>Kilometers</td>
<td>1.609,344</td>
</tr>
<tr>
<td>Pounds/acre</td>
<td></td>
<td>Kilograms/hectare</td>
<td>1.121</td>
</tr>
<tr>
<td>Quarts</td>
<td></td>
<td>Liters</td>
<td>0.946,326</td>
</tr>
<tr>
<td>Rods</td>
<td></td>
<td>Meters</td>
<td>5.029,200</td>
</tr>
<tr>
<td>Square feet</td>
<td></td>
<td>Hectares</td>
<td>9.290,300 x 10**-6</td>
</tr>
<tr>
<td>Square meters</td>
<td></td>
<td>Acres</td>
<td>2.471 x 10**-4</td>
</tr>
</tbody>
</table>
Alfalfa 97
   As wildlife habitat 253
American wigeon 48
Angus, black 22, 24
Ayshire 18

Barley 95
Barns 105
Bear
   Predators 279
Beefalo 12
Big game
   Population predictions 335
Biochronology 254
Bird watching 343
Bison 12, 65
Black angus (See Angus, black)
Black duck 49
Blackbirds
   Depredation 276
   Economic losses by 277
   Habitat use 277
Blue-winged teal (See Teal, blue-winged
Bobwhite quail (See Quail, bob-white)
Brahman 22, 25
Brangus 22, 25
Breed, definition of 12
Brown Swiss 18
Buffalo (See Bison)

Carrying capacity 128, 336
   Food resources 337
   Space resources 338
Cattle, beef 120
   Breeds of 22
   Costs 211
   Ecological metabolism 120
   Feed intake 121
   Main parts of 23
   Marketing cycles 222
   Products 122
   Weights, birth 24
   Weights, mature 24

Cattle, dairy
   Breeds of 16
   Butterfat production 21
   Costs of 209
   Dairy beef 119
   Main parts of 20
   Milk production 21
   Relative abundance 18
   Veal calves 119
   Weights, birth 18
   Weights, mature 18
   (See also individual breeds)

Cattle
   breeding 118
   definitions of terms 15
Charlois 22, 25

Chickens 32
   Age-weight 135
   Broiler production 137
   Egg production 134
   Egg types 33
   Energy requirements 135
   Feed formulation 136 (See also Linear Programming)
   Layers 134
   Management 133
   Meat types 33
   Ornamental types 33
   Pullets 134

Churches 238
Cinnamon teal (See Teal, cinnamon)
Clovers 97
Columbia sheep 28
Combines 87, 88, 90
Communications 239
Computers 7, 116
   In farm management 224
   Information processing 311
   Linear programming 136
Conservation
   Energy 351
   Ethic 351, 355
   Programs 245
Corriedale sheep 28
Fences 273
  Costs of 273, 275
  Electric 273
  Mesh 273
  Non-electric 273
Fertilizers 172, 247
  Equipment 80
  Inorganic 82, 176
  Liquid 82
  Organic 81, 175
Finn sheep 28
Fishing 346
Flush bars 255
Food
  Habits 296, 302
  Importance of 294
  Metabolizable energy in 294
  Nutrients 296
  Resources 294
Forage 97
  Harvesting 190
  Harvesting equipment 86
  Requirements of deer 271
Fox
  As predators 279
  Gray 59
  Metabolic energy requirements of red fox 282
  Red 58
Fruits 100
Furbearers 54, 56
  Physical characteristics 58
  Reproductive characteristics 58
Gadwall 49
Game, big 62
  Physical characteristics 66
  Reproductive characteristics 67
Gasohol 96
Geese, Canada 48, 52, 301
Geese, domestic 35
  Breeds of 36
  Management of 141
  Weights of 36
Goats 26, 30
  Management 123, 129
  Milk-producing 30
  Mohair-bearing 30
Grain
  Drying 195
  Farming 212
  Harvesting equipment 87
Grains
  Cereal 94
  Small 95
  Waste 301
Grasses 98
Gray fox (See Fox, gray)
Green-winged teal (See Teal, green-winged)
Guernsey 17
Gray partridge (See Partridge, gray)
Grouse
  sage 44
  sharp-tailed 45, 258
Gullies 169
Habitat 243, 247
  Diversity 278, 293, 299
Hampshire sheep 28
Harrons 75
Harvesting 189
  Equipment 83, 86, 87, 90, 91
  Forage crop 190
Hay
  Balers 84
  Digestibility 192
  Fields as wildlife habitat 252
  Harvesting 190
  Harvesting equipment 83
  Protein content 191
  Silage 193
  Stackers 85
Hedgerows 168, 258
Herbicides 189
  Application 80
Hereford 22, 23
Hereford, polled 22, 23
Hiding response 254
Hogs 4, 31 (See also Swine)
  Breeds of 31
  Colors 31
  Definitions of terms 31
  Weights, mature 31
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holstein 16</td>
<td>16</td>
</tr>
<tr>
<td>Horned 15</td>
<td>15</td>
</tr>
<tr>
<td>Horsepower 71</td>
<td>71</td>
</tr>
<tr>
<td>Horses 36</td>
<td></td>
</tr>
<tr>
<td>Breeds of 37, 38</td>
<td></td>
</tr>
<tr>
<td>Definition of terms 36</td>
<td></td>
</tr>
<tr>
<td>Energy requirements 144</td>
<td></td>
</tr>
<tr>
<td>Feeding 143</td>
<td></td>
</tr>
<tr>
<td>Management of 142</td>
<td></td>
</tr>
<tr>
<td>Pleasure horses 38, 143</td>
<td></td>
</tr>
<tr>
<td>Utility of 37</td>
<td></td>
</tr>
<tr>
<td>Work horses 142</td>
<td></td>
</tr>
<tr>
<td>Hungarian partridge (See Partridge, gray)</td>
<td></td>
</tr>
<tr>
<td>Hunting 344</td>
<td></td>
</tr>
<tr>
<td>Ice block depressions 260</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
</tr>
<tr>
<td>Processing 311</td>
<td></td>
</tr>
<tr>
<td>Sources of 312</td>
<td></td>
</tr>
<tr>
<td>Insects 186</td>
<td></td>
</tr>
<tr>
<td>Irrigation 159</td>
<td></td>
</tr>
<tr>
<td>Jersey 18</td>
<td></td>
</tr>
<tr>
<td>Judging characteristics 19f</td>
<td></td>
</tr>
<tr>
<td>Labor</td>
<td></td>
</tr>
<tr>
<td>Farm efficiency 150</td>
<td></td>
</tr>
<tr>
<td>Lactation 110</td>
<td></td>
</tr>
<tr>
<td>Land uses 243</td>
<td></td>
</tr>
<tr>
<td>Map of 314</td>
<td></td>
</tr>
<tr>
<td>Law of Interspersion 246, 293</td>
<td></td>
</tr>
<tr>
<td>Legumes 97</td>
<td></td>
</tr>
<tr>
<td>Linear programming 136</td>
<td></td>
</tr>
<tr>
<td>Machinery</td>
<td></td>
</tr>
<tr>
<td>Costs 204, 205</td>
<td></td>
</tr>
<tr>
<td>Mallard 49</td>
<td></td>
</tr>
<tr>
<td>Mammals 54</td>
<td></td>
</tr>
<tr>
<td>Nomenclature 55</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>Evaluations 327</td>
<td></td>
</tr>
<tr>
<td>Objectives 313</td>
<td></td>
</tr>
<tr>
<td>Plans 312, 327</td>
<td></td>
</tr>
<tr>
<td>Manure</td>
<td></td>
</tr>
<tr>
<td>Energy production from 148</td>
<td></td>
</tr>
<tr>
<td>Green manure 175</td>
<td></td>
</tr>
<tr>
<td>Handling 146</td>
<td></td>
</tr>
<tr>
<td>Liquid storage systems 147</td>
<td></td>
</tr>
<tr>
<td>Production 145</td>
<td></td>
</tr>
<tr>
<td>Manure spreaders 81</td>
<td></td>
</tr>
<tr>
<td>Marketing 216</td>
<td></td>
</tr>
<tr>
<td>Costs of 217</td>
<td></td>
</tr>
<tr>
<td>Distribution of 216</td>
<td></td>
</tr>
<tr>
<td>Marshes 260</td>
<td></td>
</tr>
<tr>
<td>Microcomputer (See Computer)</td>
<td></td>
</tr>
<tr>
<td>Milk 107</td>
<td></td>
</tr>
<tr>
<td>production 110</td>
<td></td>
</tr>
<tr>
<td>Milk handling 107</td>
<td></td>
</tr>
<tr>
<td>Mink 57</td>
<td></td>
</tr>
<tr>
<td>Mortality</td>
<td></td>
</tr>
<tr>
<td>Causes of 254</td>
<td></td>
</tr>
<tr>
<td>Mourning dove 44</td>
<td></td>
</tr>
<tr>
<td>Mule deer (See Deer, mule)</td>
<td></td>
</tr>
<tr>
<td>Muskrat 56</td>
<td></td>
</tr>
<tr>
<td>Nesting</td>
<td></td>
</tr>
<tr>
<td>Dates 298</td>
<td></td>
</tr>
<tr>
<td>Renesting 299</td>
<td></td>
</tr>
<tr>
<td>Success 249, 280</td>
<td></td>
</tr>
<tr>
<td>Nitrogen 174</td>
<td></td>
</tr>
<tr>
<td>Northern shovellor 51</td>
<td></td>
</tr>
<tr>
<td>Oats 95</td>
<td></td>
</tr>
<tr>
<td>Orchards 100</td>
<td></td>
</tr>
<tr>
<td>Damage to 269</td>
<td></td>
</tr>
<tr>
<td>Organizations</td>
<td></td>
</tr>
<tr>
<td>Business 233</td>
<td></td>
</tr>
<tr>
<td>FFA 233</td>
<td></td>
</tr>
<tr>
<td>Youth 233</td>
<td></td>
</tr>
<tr>
<td>4-H 235</td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
<td></td>
</tr>
<tr>
<td>Land 308</td>
<td></td>
</tr>
<tr>
<td>Wildlife 308</td>
<td></td>
</tr>
<tr>
<td>Partridge, Gray 45</td>
<td></td>
</tr>
<tr>
<td>Habitat use 252</td>
<td></td>
</tr>
<tr>
<td>Parturition 110</td>
<td></td>
</tr>
<tr>
<td>Pastures 194</td>
<td></td>
</tr>
<tr>
<td>Habitats for wildlife 252</td>
<td></td>
</tr>
<tr>
<td>Management 255</td>
<td></td>
</tr>
<tr>
<td>Pheasant, ring-necked 46</td>
<td></td>
</tr>
<tr>
<td>Nesting habitat 253</td>
<td></td>
</tr>
<tr>
<td>Nesting success 249</td>
<td></td>
</tr>
<tr>
<td>Population predictions 334</td>
<td></td>
</tr>
<tr>
<td>Pintail 50</td>
<td></td>
</tr>
<tr>
<td>Plant</td>
<td></td>
</tr>
<tr>
<td>Growth 174</td>
<td></td>
</tr>
<tr>
<td>Pathogens 186</td>
<td></td>
</tr>
<tr>
<td>Planters 76, 77</td>
<td></td>
</tr>
</tbody>
</table>

364
Plowing
    Contour 156
Plows 74, 160
Polled cattle 15
Ponds
    Ephemeral 157
    Farm 157
Population
    Analyses 324
    Census 324
    Estimates 325
    Predictions 307, 323, 328
Potholes 260
Poultry 32
    Definition of terms 32
    Management 132
    Production efficiency 133
    (See also Chickens, Ducks, Geese, Turkeys)
Power 2
Prairie chicken 44
Precipitation
    Acidic 197
    In United States 181
Predation 267
    On livestock 279
    On wildlife 280
Predators 58
    Control of 281
    Physical characteristics 61
    Reproductive characteristics 61
Production
    efficiency 8
    livestock 103
Pronghorn 64
Property values 200 (See also Values)
Purebreds 11
Quail, Bobwhite 45
    Cover 306
    Food patches 306
    Management for 308
    Winter survival 25
Rabbits
    Damage by 269
Raccoon 57
Rambouillet sheep 28
Resources
    Cover 292
    Food 292
    Space 292, 307
Red fox (See Fox, red)
Registered 11
Registry application 13
Revolutions 1
    Biological 4
    Business 5
    Information 6
    Mechanical 2
    Social 5
    Technological 3
Root crops
    Harvesting equipment 91
Ring-necked pheasant (See Pheasant, ring-necked)
Roads 263
    Ditches 263
Row crops
    Habitats for wildlife 250
Rye 96
Sage grouse (See Grouse, sage)
Santa Gertrudis 12, 22, 25
Schools 237
Sharp-tailed grouse (See Grouse, Sharp-tailed)
Sheep 26, 27
    Breeds of 28
    Definition of terms 27
    Energy requirements 124, 127
    Finishing lambs 126
    Forage intake 124, 127
    Growth 28
    Management 123, 125
    Populations 124
    Rations 126
    Reproductive performance 28
    Wool 28, 29
Shelterbelts 168, 258
    Phenology of 297
    Snow accumulation 306
    Wind reduction 304
Shopping centers 239
Shorthorn 22
Silos 86
Simmental 22, 25
Skunk 60
Small grains
Habitats of 248
Small mammals 61
Natural history information 62
Sociology 229
Family togetherness 349
Individual freedoms 349
Non-resident landowners 232
Quality of life 348
Soil
Classification 163
Compaction 169
Conservation 164
Contour cultivation 172
Fertility 174
Management 153
Nutrients 174
Orders 163
Particles 160
Profiles 162
Texture 161
Solar radiation 180
In United States 181
Songbirds 53
Sorghum 96, 98
Space
Requirements 307
Speculations 352
Sprayers 80
Strip cover 262
Strip cropping 168
Suffolk 28
Sunshine (See Solar radiation)
Swine
Enterprises 131
Management 130
Targhee sheep 28
Teal
Blue-winged 50
Cinnamon 51
Green-winged 50
Technology 352
Temperature 182
Rhythms 183
Terraces 155
Tillage
Equipment 73
Primary 73, 185
Secondary 75
Tractors 70
Costs 204
Horsepower 71, 204
Transpiration 156
Transportation 239
Trapping 345
Turkeys 33
Breeds of 34
Management 137
Poults 138
Rearing 139
Weights of 34
Wild 33
Untilled land 257
Upland game birds 42
Nomenclature 42
Physical characteristics 47
Population predictions 333
Reproductive characteristics 47
Values
Animal 206, 209
Land 202
Machinery 203
Property 200
Wildlife 341
Vegetables 100
Waste management 144 (See also Manure)
Water
  Conservation 155
  Management 154
  Surface 157
  Table 261
  Transpiration 156
Waterfowl 43, 48
  Depredation 283
  Habitat use 262
  Management 140
  Nesting success 252
  Nomenclature 43
  Physical characteristics 52
  Population predictions 333
  Reproductive characteristics 53
Watershed
  Characteristics 170
Weed-control 78
Wetlands 260, 315
Wheat 95
White-tailed deer (See Deer, white-tailed)
Wild game 41
  Uses of 41
Wildlife
  Management 41, 291
  Requirements 292
  Speculations 333
Wind
  Velocity profiles 166
Woodlots 257