

Index

Note: Color plates are indicated with italicized *cp.* *Italicized page numbers* indicate insets or illustrations.

- Accountant review, 49
- Acres, measuring, 173
- Actions, proposed, 146, 161
- Addictive uses, 214
- Adverse factors, 33
- Africa Centre for Holistic Management, 235
- Analysis: in basic land monitoring, 144–47, 231; in comprehensive land monitoring, 154–57, 234; of livestock production, 24–27. *See also* Gross profit analysis
- Animal cycles, 88–90
- Animal-days (ADs), 58, 58–60, 70–71
- Animal-days per acre (ADA), 60, 67, 74–76, 237
- Animal-days per dollar (AD/\$), 186–87
- Animal-days per hectare (ADH), 60, 74–76, 237
- Animal handling, low-stress, 207
- Animal impact, 85–86, 130, 143, 237. *See also* Herd effect
- Animal performance, 117
- Animal signs. *See* Wildlife species
- Animal unit months (AUMs), 58
- Annual income and expense plan, 21, 39, 40, 217
- Annual plants, 61, 123, 153, 156

- Balancing the plan, 43–44
- Bank balance and cash flow, 44–48
- Barlite case, 85
- Basic land monitoring, 138–47
- Biodiversity, defined, 237
- Biological monitoring: brittleness, 121–22; changing conditions, 117; forms, 229–34 (*See also* Forms); grazing patterns, 133–35; historical data, 119; landscape description, 144–46; photo record, 120; progress checks, 119–20, 146; soil surface, 121
- Biological weak link, 212
- Biomass, defined, 237
- Bonuses, and net managerial income, 20–21
- Brainstorming, 19–20, 30, 34, 38, 181
- Brittleness: in biological monitoring, 121–22; characteristics of, 122; defined, 237–38; and herd effect, 85–86; high rainfall and, 121, 134; and overrested plants, 133; rest and, 121–22, 159
- Broken capping, 130
- Browse lines, 133
- Bunchgrass plants, 61–62

- Calf traps, 197–98
- Calving, 88–90
- Camera stand, homemade, 140
- Capital expenditures, 184
- Capping. *See* Soil capping
- Carrying capacity of land, 78, 104
- Cash flow, 44–48
- Catchments, 199
- Cattle enterprise. *See* Livestock production
- Cell. *See* Grazing cells
- Cell centers, 191–99, 194–96, 204
- Center corridors, 193, 196
- Chain of production, 6–7, 212
- Change analysis, 156–57, 158
- Changing conditions, 117, 146
- Checklists, 167, 183
- Climax communities, 122–24
- Closed plan, *cp2.2*, *cp2.4*; in aide memoire, 93; carrying capacity of land, 104; defined, 238; destocking, 105; drought reserves, 106; follow-through grazing, 224; forage quality rating, 99; grazing periods, 105–6, 226–27; implementation, 109; nongrowing season and, 94;

- Closed plan (*Continued*)
paddocks quality, 101; recording actual events, 113
- Community dynamics: animal impact and, 159–60; defined, 238; fire and, 158; as land health indicator, 122–24; in landscape description, 120; living organisms and, 135–36; and mineral cycle, 128; soil movement and, 156
- Community remnants and succession, 124
- Comprehensive land monitoring: actions, proposed, 161; biological monitoring forms, 147, 148–50, 232–34; data gathering, 137–38; data summary and analysis, 154–57; equipment needs, 147–51; interpreting results, 158; progress checks, 155–57; recording observations, 152–54; shortcuts, 161; tools and effects, 158–61; transects, 147, 151–52
- Computers and planning, 29–30, 49
- Construction sequence, 184–85
- Consumptive uses, 9, 214
- Control sheets, 21, 51, 219
- Cooperatives, and cash flow, 46–48
- Costs: fixed, 11–13, 20–21, 43; plan implementation, 184; production, 9–11, 37–38; variable, 11–12
- Cover, and ecosystem processes, 156–57
- Coyotes, and community dynamics, 136
- Crop production, 8, 95, 170
- Crop production management, 168
- Crumb structure, defined, 238
- Culling program, in multispecies herds, 87
- Cyclical uses, 214
- Dams, 199
- Darts, sampling, 151, 152–54
- Data gathering and recording: overview, 30; about herds, 97; actual results, 110–13; in basic land monitoring, 144; in comprehensive land monitoring, 137–38, 152–54; historical, 119;
- Data gathering and recording (*Continued*): importance of, 161; in land planning, 167–68; with photography, 120; SAUs, 97. *See also* Forms
- Data summary and analysis, 154–57
- Debt service, and cash flow, 45–48
- Debt service, and profit, 41
- Decision-making, 17–19, 30–31, 92
- Depreciation, 39, 48–49
- Desertification, defined, 238
- Destocking, 79, 80, 85, 105
- Deviations from plan, 50–51, 51, 117, 139
- Digital cameras, 120
- Dimbangombe Ranch, 189
- Diversity, and gross profit analysis, 16
- Documentation phase, 30
- Dollars, paper, 7–8
- Domestic animals, and succession, 123
- Drought management, 78, 83–84, 109–10
- Drought reserves: in aide memoire, 93; in closed plan, 104, 106; defined, 238; forage and, 70–76; in holistic grazing plan, 94; in time vs. acres, 71–74
- Dunes, and sheet erosion, 125–26
- Ecosystem processes, 117–18, 120.
See also individual processes
- Effective recovery period, 238
- Electric fences, 191, 202–6
- Energy conversion, 184
- Energy flow, 120, 128–30, 129, 130, 157
- Energy sources and use guidelines, 7–9, 213–14
- Enterprise selection, 36
- Enterprise worksheets, 38, 42
- Equipment needs, in land monitoring, 139–40, 147–51
- Erosion, 124–26, 154
- Estimating, in varied terrain, 77–78, 99
- Expenses, 36, 38–39, 40, 41–42, 42, 43–44
- Facilities: development and marginal reaction, 185–89; existing, 181–82;

Holistic Management Handbook: Healthy Land, Healthy Profits

by

Jody Butterfield, Sam Bingham, and Allan Savory

- Facilities (*Continued*): infrastructure, 165–66, 168, 181, 213–14; livestock handling, 196, 197–98
- Failure, reasons for, 37
- Fear of planning, 93
- Feedback loop, in land monitoring, 138
- Feed value of plants in nongrowing season, 79–81
- Fencing: cell centers and fence patterns, 194–95; development approaches, 185–89; electric, 191, 202–6; herding vs., 170, 189; movable, 191; temporary, 203; as water source protection, 199
- Financial decisions, alignment of, 4
- Financial plan, 16, 52, 55–56, 215–19
- Financial weak link, 6–7, 212
- Fire, and ecosystem processes, 158–59
- Fixed costs, 11–13, 20–21, 43
- Flexibility and survival, 9–11
- Flow patterns and sheet erosion, 125
- Follow-through grazing, 220, 221, 224
- Forage: consumption, monitoring, 109; cycles and nutrition, 91; digestibility of, 70; nongrowing season, 78; nutritional value of, 81; quality of, 98–101; reserves, estimating, 99; reserves vs. holistic grazing planning, 70–76; utilization, measuring, 58–60; volume, in closed plan, 104; wildlife species and planning, 77–78
- Forbs, defined, 238
- Forest management, monitoring, 118
- Forms: Biological Monitoring Analysis - Basic, 145, 231; Biological Monitoring Analysis - Comprehensive, 150, 234; Biological Monitoring Data - Basic, 142, 230; Biological Monitoring Data - Comprehensive, 148, 232; Biological Monitoring Summary - Comprehensive, 149, 233; comprehensive land monitoring, 147; financial planning, 215–19; grazing planning, 220; planning, 21–28
- Fouling, and grazing efficiency, 83
- Frequent grazing, defined, 239
- Future landscape, 155, 214
- Gates, 204
- Glossary, 237–41
- Goals, ownership of, 52
- Grandin, Temple, 197
- Grass types, and water cycle, 127
- Graze-to-recovery ratio, 238–39
- Grazing: defined, 239; fouling and efficiency in, 83; multiple herds in single cell, 221–25; overgrazing, 61–64, 88, 102, 131, 132, 240; rotational, 81–82, 85, 240–41; slow moves vs. rapid moves, 63–64; strip, 191, 241; ultra-high-density, 192, 241
- Grazing cells, 55, 84, 173–79, 177, 239
- Grazing charts, 95–96, *cp2.1–cp2.4*
- Grazing patterns, 97–98, 133–35
- Grazing periods: calculating actual, 225; in closed plan, 105–6, 226–27; combined herds and, 84; herd size and, 226–27; length, 63, 109; multiple herds and, 223; in open-ended plan, 102–4; and paddocks, 67; and recovery periods, 63–64
- Grazing planning: benefits of, 57; drought reserves, 94; forage reserves vs. holistic, 70–76; forms for, 220; grazing plan & control chart, 95–96, 222; overstocking, 76–77; plotting, 106–7
- Grazing record, actual, 111
- Gross profit analysis: asset use comparisons and, 15–16; in breeding and production, 88; of current enterprises, 34–35; enterprise comparisons and, 14; fed vs. pastured dairy cattle, 11–12; limitations of, 16–17; purposes for, 12–13; scenario comparisons and, 14–15; as testing guideline, 5, 213
- Gross profit per unit, 16
- Ground cover, and succession, 124
- Grounding electric fencing, 203–4
- Group sessions, in land planning, 180
- Growing season plan (open ended), 94

Holistic Management Handbook: Healthy Land, Healthy Profits

by

Jody Butterfield, Sam Bingham, and Allan Savory

- Growth rate monitoring, in open-ended plan, 108
- Guidelines: management, 57; for multiple herds in single cell, 221; for paddocks layout, 191; for planning, 93. *See also* Testing guidelines
- Gully crossings, 204
- Handling facilities, 196, 197–98
- Hard-capped areas, 143
- Hectares, measuring, 173
- Hedging, 133
- Herd effect, 85–86, 143, 239
- Herding vs. fencing, 170, 189
- Herds: combining, 79, 84–85; data documentation, 97; multiple, 221–25; single vs. multiple, 86–89; size of, 173–79, 177
- Historical data, in biological monitoring, 119
- Holistic goals and principles, 4–5, 37, 117, 165–66, 181
- Holistic Management International, 235
- Holistic Management Model, 57
Holistic Management (Savory), 57
- Howell, Jim, 205
- Humidity, distribution of, 121
- Hydrophytic plants, 127
- Immature capping, 130, 238
- Implementation, 108–10, 165–66, 184
- Income worksheets, 38
- Inescapable expenses, 39, 41–42
- Infrastructure, 165–66, 168, 181, 213–14
- In Practice* (newsletter), 235
- Interest owed and cash flow, 45–48
- Interpretation of change, 158
- Inventory consumption, 38, 42
- Investments, 7–9, 44
- Kroos, Roland, 187
- Lambing, 88–90
- Lambing boards, 197
- Land area, measuring, 173–74
- Land boundaries, as factor in land planning, 179
- Land cycles, 88–90
- Land divisions, 64
- Land management tools, 57. *See also specific tools*
- Land monitoring: basic procedure, 137–47; comprehensive procedure, 137–38, 147–61; scenario interpretation, 228
- Land planning, 166, 175, 179, 188, 192
- Landscape, future, 155
- Landscape description, 119–20, 144–46
- Landscape features mapping, 167
- Landscape modifications, 117
- Land yields, in ADA/ADH, 60
- Litter, 124–25, 127, 130
- Livestock industry, 117
- Livestock management: calm handling methods, 86; destructive routines and, 134–35; driving vs. training to move, 206–7; exclusion periods, 97; mineral supplements, 128; monitoring in, 118; trail formation, 191; training to electric fences, 204–6
- Livestock production: cropland and, 170; management factors, 168; production plan, 23–28; purpose of, 21–23, 38; summary results, 112; weak link identification in, 8; worksheets, 24–25, 26–27, 218
- Living organisms, as management tools, 160
- Loans, and cash flow, 48
- Logjams, 31–33, 41
- Los Ojos Ranch, 77–78
- Low-density grazing, 134, 239
- Low stock density, 133–35
- Low-stress handling techniques, 189
- Maintenance expenses, 39, 44
- Malmberg, Tony, 86
- Management: deviations from plan, 50–51; fundamental principle of Holistic, 117; guidelines and tools, 57; open-book, 20–21; of production, 168; recording concerns, 97; team work in, 37, 167, 180–81; tips, 17–21;

- Management (*Continued*): tools, 158–60. *See also* Livestock management
- Maps: of landscape features, 167; master, 169; overlays, 172, 183; preparation of, for planning session, 180; topographical, 171
- Marginal reaction guideline, 9–11, 44, 179
- Master cropping plan worksheet, 95
- Master maps, 169
- Mature capping, 130, 238
- Mental attitude, 29, 50
- Mesophytic plants, 127
- Mineral cycle, 120, 126–28, 157, 159–60, 239
- Mineral deficiency symptoms, 128
- Mineral dollars, 7
- Miscellaneous income worksheet, 38
- Money, 4, 7–9, 52, 213–14
- Monitoring: forage consumption, 109; growth rates, in open-ended plan, 108; importance of, 161; land performance vs. species, 117; planned vs. actual figures, 50; progress, 93. *See also* Biological monitoring; Land monitoring
- Monitoring phase, 30–31, 49–52
- Monthly surplus/(deficit), and cash flow, 44–48
- Movable fences, 191, 191
- Multiple herds, 221–25
- Multispecies herds, 86–88
- Natural issues checklist, 167
- Net managerial incomes (NMI), 20–21
- No fencing option, 189
- Nonbrittle environments, 70, 121–22, 134, 159
- Nongrowing seasons, 71–74, 94
- Notes, and cash flow, 48
- Nutrition, 69–70, 79–83, 91
- Objectives, 5
- Observations, 118, 144–47, 152–54
- Open-book management, 20–21
- Open-ended plan: in aide memoire, 93; defined, 239–40; documenting unfavorable grazing patterns, 97–98; follow-through grazing, 224;
- Open-ended plan (*Continued*): grazing charts, *cp2.1*, *cp2.3*; grazing periods, 102–4; growing season, 94; implementation, 108–9; rating forage quality in, 99; recording actual events, 112–13; recovery periods, 102, 103
- Other expenses, defined, 39
- Outsiders, in land planning, 180
- Overbrowsed plants, 131–33, 132
- Overdraft, simple, and cash flow, 45–46
- Overgrazing, 61–64, 88, 102, 131, 132, 240
- Overrested plants, 70, 133, 240
- Overstocking, in year-round grazing plans, 76–77
- Ownership in planning procedure, 29–30
- Paddocks: in closed plan, 105–6; defined, 57, 240; as factor in land planning, 175; grazing periods, 67; layouts, 55, 134–35, 173–75, 179, 190–91, 191; overgrazing, 102; productivity of, 98–101; quality of, 100–101, 109; recovery time for, 65; rotation and addition of, 64–67; splitting, effects of, 69; stock density and, 67–69, 68; strip grazing and, 191
- Parasites, 90
- Pasture, defined, 240
- Patch grazing, 134
- Pedestaling, sheet erosion and, 124–25, 125
- People, in future resource base, 214
- Perennial plants, 61, 123, 154–55
- Pests, 90
- Photography, 120, 141, 143, 152
- Physiological needs of animals, 59, 74, 90, 91
- Plan assessment, 48–49
- Plan check, final, 107–8, 183
- Plan evaluation, 183
- Planimeter, 173
- Planned grazing, defined, 240
- Planning: circles or squares, 176; forms, 21–28; gross profit analysis and, 12; guidelines for, 93;

- Planning (*Continued*): for multiple herds in single cell, 221–25; preliminary phase, 30–36; procedures, 29–31, 50; projections, 48–49; reworking the plan, 49; on sketched map, 182; for small land units, 55–56; steps in, 190; team work in, 37, 167, 180–81; writing the plan, 30, 36–49. *See also specific plan types*
- Plant habitat, and water cycle effectiveness, 126
- Plants: in comprehensive land monitoring, 153–55; ecosystem processes and, 156–57; feed value, in nongrowing season, 79–81; overbrowsed, 131–33, 132; overgrazed, 61–62, 131, 132; overrested, 133, 240; pedestaling of, 124–25, 125; poisonous, 79; recovery requirements for, 61–62; succession and, 123–24; water cycle and, 127
- Plumb bobs, 152, 153
- Poisonous plant danger, 79
- Preplanning session, 94–95
- Product conversion, 6–7, 66, 184, 212
- Production costs, 9–11, 37–38
- Production management, factors in, 168
- Productivity approach to fence development, 186
- Profitability, 5, 33–35, 37, 41, 44, 49
- Progress checks: in basic land monitoring, 139; in biological monitoring, 119–20; in biological monitoring analysis, 146; in comprehensive land monitoring, 155–57; interpreting results in, 158
- Projections, in financial planning, 48–49
- Radial layout of paddocks, 55, 134–35, 173–75, 179
- Rainfall, 78
- Rapid moves, 79, 85
- Recent capping, 130
- Recovery approach to fence development, 185–86
- Recovery periods, 62–64, 84, 102, 103, 109, 238
- Recovery rates, 63, 238–39
- Recovery requirements, 61, 61–63, 62
- Reserves, in time vs. acres, 70–71, 83
- Reservoir construction, 200
- Resource conversion, 6–7
- Resource enhancers, 212
- Rest, 63, 121–22, 133, 159, 240
- Rest-tolerant grasses, 240
- Richardson, Dick and Judy, 17–19
- Risk, spreading, 33–35
- River Bench Ranch, 96
- Root depth, 127
- Rotational grazing, 81–82, 85, 240
- Routine, human weakness for, 113
- Runner grass plants, 61–62
- Rutherford, Bob, 197
- Salination, 128
- Sampling darts, 151, 152–54
- SAUs (standard animal units), 59, 74, 241
- Scenarios, 14–15, 158, 188, 228
- Schedules, sequence, and timing, 30–31, 64, 92, 138, 184–85
- Severe grazing, defined, 239
- Sheep Creek Drainage, 119
- Sheet erosion, 124–26
- Shortcuts, 161
- Siltation, 125
- Simple Appreciation technique, 17
- Single herd management, 86–88
- Single-sire breeding, 87, 198
- Slopes, with radial layout, 179
- Sloughs, 199
- Slow moves vs. rapid moves, 63–64
- Social issues checklist, 167
- Social weak link, 211–12
- Software, 29, 37
- Soil acidity, 128
- Soil alkalinity, 128
- Soil capping, 130–33, 153, 156–57, 238
- Soil erosion, 124–26, 154
- Soil movement, 156–57
- Soil organisms, 127
- Soil permeability, 126
- Soil pH, 128
- Soil surface, 118

- Soil surface conditions, 121, 153, 155
Solar dollars, 7–9
Species complexity and diversity, 86–88, 123. *See also* Wildlife species
Species identification, 133
Species monitoring, 117
Splash patterns, 125
Spreadsheet programs, 29
Spreadsheets, 37, 39, 42, 42, 43
Standard animal units (SAUs), 59, 74, 241
Stock density, 67–70, 158, 241
Stocking rates: in acres, 72; in comprehensive land monitoring, 158; defined, 71–74, 241; determining, 76; as factor in land planning, 175; field check, 109; in hectares, 73; nongrowing season forage and, 78
Stock reduction, 104
Straining posts, 203
Stream crossings, 204
Strip grazing, 191, 241
Succession, 123–24, 241
Sunlight harvesters, 212
Supplementation, 81
- Tax consequences of plan, 49
Team work, 37, 167, 180–81
Technology, as tool, 160
Temporary fencing, 203
Temporary gates, 205
Testing guidelines: cause and effect, 211; energy/money source and use, 7–9, 213–14; gross profit analysis, 5, 11–17, 213; marginal reaction, 9–11, 44, 179, 212–13; society and culture, 214; sustainability, 214; weak link, 6–7, 211–12
Timber production management, 168
Timing, in holistic grazing management, 64
Topographical maps, 169, 171
Topography, in land planning, 179
Trail formation, by livestock, 134–35, 191
Trample-to-recovery ratio, 238–39
Transects, 137–38, 140–41, 147, 151, 151–52, 241
- Triple bottom line, 29
Ultra-high-density grazing, defined, 241
Van Vuuren case, 79
Variable costs, 11–12
Virtual fencing, 189
- Wagon wheel pattern, 55, 134–35, 173–75, 179
Water cycle: analysis of changes in, 156–57; in current landscape description, 120; defined, 241; effectiveness test, 126; and fire, 158–59; and grass types, 127; as land health indicator, 124–26; as management tool, 158–60
Water supply, 84–85, 175, 179, 183, 185, 199–201
Water temperature, 199–201
Weak link, 6–8, 35–36, 42, 66, 211–12
Wealth-generating expenditures, 6–7, 32–33, 38, 42
Wetlands restoration and management, 118, 136
Wildlife species, 74, 77–78, 88, 136, 153, 156–57
Williams, Bud, 86
Wire attachments, 202–3
Woody plants, and succession, 124
Worksheets, 216; alfalfa production and sales, 22; as backup to income-and-expense spreadsheet, 37; biological year of cow herd, 22; enterprise expense, 42; fuel use and purchase projections, 22; gross profit analysis, 35; income, 38; livestock production, 24–25, 26–27, 218; master cropping plan, 95; purpose and uses for, 21–23; standard, for breeding and production, 88; weak link expenses, 36; wealth-generating expenses, 32
- Xerophytic plants, 127
Yearling operations, 77–78
Year-round grazing plans, 76–77