

# *Identifying co-management practices in Hawaii*

## Step 1

- Generate list of best management practices related to conservation from Natural Resource Conservation Service (NRCS) Pacific Island Areas and co-management literature
- Generate list of food safety practices from Food Safety Modernization Act (FSMA) resources and co-management literature

## Step 2

- Reduce both lists of practices from Step 1 into one list, to remove those with low potential relevance to Hawaii agriculture or co-management with advising team

## Step 3

- Consult with agricultural professionals to “rank” practices with highest positive impact on both food safety and conservation
- Generate a venn diagram of practices identified to benefit food safety, conservation, and co-management

## Step 4

- Interview farmers and integrate advice/concerns/suggestions into the list of practices recommended for farmers in Hawaii

# Step 1 – Conservation practices

Access Control
Access Road
Agrichemical Handling Facility
Air Filtration and Scrubbing
Alley Cropping
Amending Soil Properties with Gypsum Products
Amendments for Treatment of Agricultural Waste
Anaerobic Digester
Animal Mortality Facility
Anionic Polyacrylamide (PAM) Erosion Control
Aquaculture Ponds
Aquatic Organism Passage
Bedding
Bivalve Aquaculture Gear and Biofouling Control
Brush Management
Building Envelope Improvement
Channel Bed Stabilization
Clearing & Snagging
Combustion System Improvement
Composting Facility
Conservation Cover
Conservation Crop Rotation
Constructed Wetland
Contour Buffer Strips
Contour Farming
Contour Orchard and Other Perennial Crops
Controlled Traffic Farming
Cover Crop
Critical Area Planting
Cross Wind Ridges
Cross Wind Trap Strips
Dam
Dam, Diversion
Deep Tillage
Denitrifying Bioreactor
Dike
Diversion
Drainage Water Management
Dry Hydrant
Dust Control from Animal Activity on Open Lot Surfaces
Dust Control on Unpaved Roads and Surfaces
Early Successional Habitat Development/Mgt.

Emergency Animal Mortality Management
Farmstead Energy Improvement
Feed Management
Fence
Field Border
Field Operations Emissions Reduction
Filter Strip
Firebreak
Fish Raceway or Tank
Fishpond Management
Forage and Biomass Planting
Forage Harvest Management
Forest Stand Improvement
Forest Trails and Landings
Fuel Break
Grade Stabilization Structure
Grassed Waterway
Grazing Land Mechanical Treatment
Groundwater Testing
Heavy Use Area Protection
Hedgerow Planting
Herbaceous Weed Control
Herbaceous Wind Barriers
High Tunnel System
Hillside Ditch
Integrated Pest Management
Irrigation Canal or Lateral
Irrigation Ditch Lining
Irrigation Field Ditch
Irrigation Land Leveling
Irrigation Pipeline
Irrigation Reservoir
Irrigation System, Microirrigation
Irrigation System, Surface & Subsurface
Irrigation System, Tailwater Recovery
Irrigation Water Management
Karst Sinkhole Treatment
Land Clearing
Land Reclamation, Abandoned Mined Land
Land Reclamation, Currently Mined Land
Land Reclamation, Landslide Treatment
Land Reclamation, Toxic Discharge Control

Land Smoothing
Lighting System Improvement
Lined Waterway or Outlet
Livestock Pipeline
Livestock Shelter Structure
Mine Shaft & Adit Closing
Mole Drain
Monitoring Well
Mulching
Multi-Story Cropping
Nutrient Management
Obstruction Removal
On-Farm Secondary Containment Facility
Open Channel
Pond
Pond Sealing or Lining, Concrete
Pond Sealing or Lining, Compacted Soil Treatment
Pond Sealing or Lining, Flexible Membrane
Precision Land Forming
Prescribed Burning
Prescribed Grazing
Pumping Plant
Range Planting
Recreation Area Improvement
Recreation Land Grading and Shaping
Residue and Tillage Management, No Till
Residue and Tillage Management, Reduced Till
Restoration and Management of Rare or Declining Habitats
Riparian Forest Buffer
Riparian Herbaceous Cover
Road/Trail/Landing Closure and Treatment
Rock Barrier
Roof Runoff Structure
Roofs and Covers
Row Arrangement
Salinity and Sodic Soil Management
Saturated Buffer

Sediment Basin
Shallow Water Development and Management
Short Term Storage of Animal Waste and Byproducts
Silvopasture Establishment
Spoil Spreading
Spring Development
Sprinkler System
Stormwater Runoff Control
Streambank and Shoreline Protection
Stream Crossing
Stream Habitat Improvement and Management
Stripcropping
Structure for Water Control
Structures for Wildlife
Subsurface Drain
Surface Drainage, Field Ditch
Surface Drainage, Main or Lateral
Surface Roughening
Terrace
Trails and Walkways
Tree/Shrub Establishment
Tree/Shrub Site Preparation
Tree/Shrub Pruning
Underground Outlet
Upland Wildlife Habitat Management
Vegetated Treatment Area
Vegetative Barrier
Vertical Drain
Waste Facility Closure
Waste Recycling
Waste Separation Facility (no)
Waste Storage Facility
Waste Transfer
Waste Treatment
Waste Treatment Lagoon
Water and Sediment Control Basin
Water Harvesting Catchment
Watering Facility
Water Well

Waterspreading
Well Decommissioning
Wetland Creation
Wetland Enhancement
Wetland Restoration
Wetland Wildlife Habitat Management
Windbreak/Shelterbelt Establishment
Windbreak/Shelterbelt Renovation
Woody Residue Treatment

169 conservation-focused practices

# Step 1 – Food safety practices

Bird deterrent
Birms to prevent runoff
Cleared vegetation for bare ground cover
Composting facility
Conservation cover
Constructed wetlands
Correct application of amendment
Cover crops
Diversion
Effective composting handling
Fence
Grassed waterway
Handwashing
Invasive pest control
Minimize compost runoff

Minimize wind drift of compost
Monitor wildlife
No harvest zones (contamination)
Non-manure animal amendment
Non-poison traps
Owl boxes
Poison bait traps
Recordkeeping of amendments
Riparian restoration
Sanitary designated toilet
Sediment basin
Vegetative buffer
Visitor boundaries - access control
Water testing
Windbreak/dust control
Worker hygiene
Worker illness awareness

33 food safety-focused practices

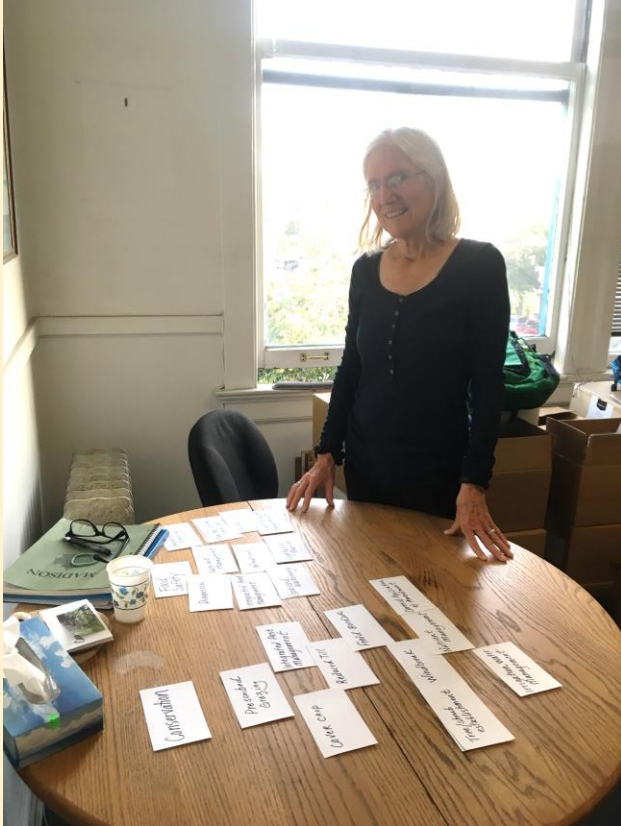
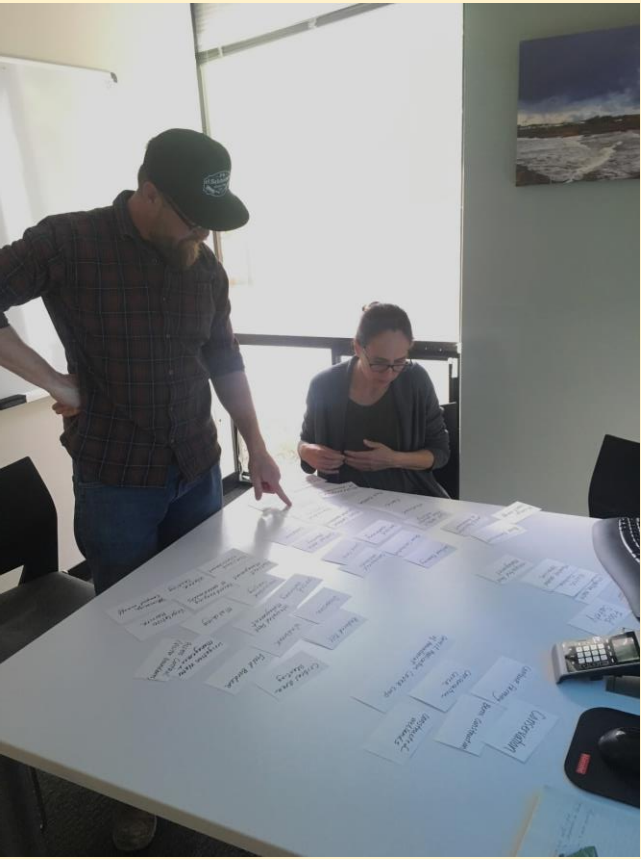
# Step 2 – Potential co-management practices

Access control - visitor boundaries
Bird deterrent
Berm construction
Conservation cover
Constructed wetlands
Contour farming
Correct application of amendment
Cover crops
Critical area planting
Diversions
Dust control from animal activity on open lot surfaces
Fence
Field borders/hedgerow

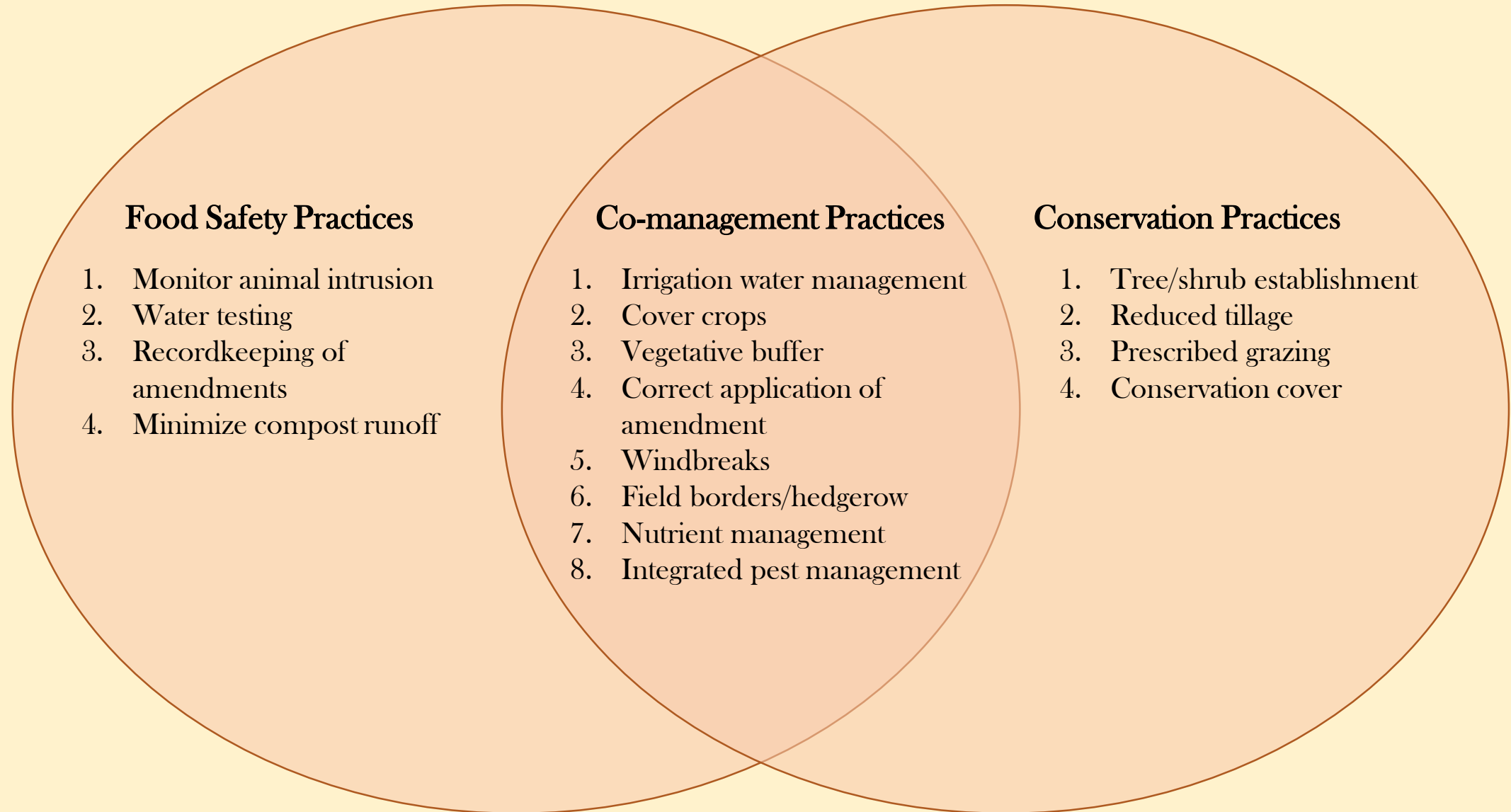
Grassed waterway
Integrated pest management
Irrigation water management
Minimize compost runoff
Monitoring animal intrusion
Mulching
Nutrient management
Prescribed grazing
Recordkeeping of amendments
Reduced tillage
Tree/shrub establishments
Vegetative buffer
Water testing
Windbreaks

27 practices

# Step 3 – Ranking practices with ag professionals



# Step 3 – Venn diagram of recommended practices



# Step 4 – Interview farmer advisors

- Conducted in 2020
- Answers from participants were used in the final development of the seven suggested co-management practices:
  - Compost amendment
  - Cover crops
  - Fencing
  - Grassed waterway
  - Mulching
  - Vegetative barrier
  - Windbreak