



COMPANION PLANTING

Brandon Merchant

- Owner of Southwest Victory Gardens
- Pima County Certified Master Gardener
- SmartScape Certified
- Former President of Tucson Organic Gardeners

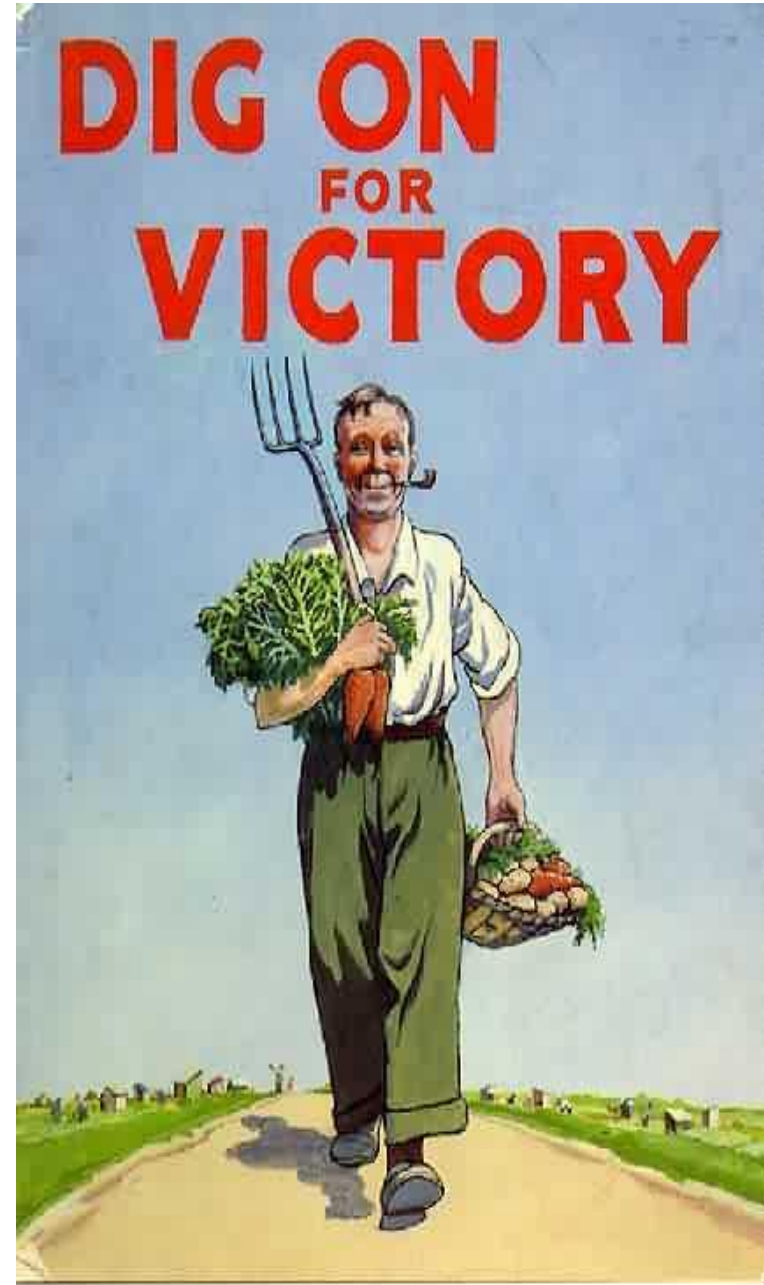




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Our Philosophy

- Healthy soil encourages healthy plants
- Healthy plants require fewer pesticides and fertilizers (inputs)
- Limit external inputs
- Reduce water usage
- Garden with our climate not against it
- Encourage a natural ecosystem



Companion Planting

- Planting multiple crops in close proximity so that they may benefit the growth of one another. Companion planting is a form of Polyculture, which is a central principle of organic gardening.




COMPANION PLANTING VEGETABLES

BEETROOT



 Brussel Sprouts	 Broccoli	 Onions	 Cabbage	 Swiss Chard
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BEANS



 Corn	 Pepper	 Raddish	 Eggplant	 Peas
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CARROT



 Lettuce	 Peas	 Onions	 Raddish	 Leek
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CHILI PEPPER



 Carrot	 Onion	 Lettuce	 Squash	 Beans
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TOMATO



 Onion	 Cabbage	 Carrot
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ONION



 Parsnip	 Lettuce	 Beetroot	 Cabbage	 Carrot
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RADISH



 Spinach	 Beans	 Lettuce	 Carrot	 Peas
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SWISS CHARD



 Onion	 Beetroot	 Cabbage
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PEAS



 Beans	 Carrot	 Turnip	 Cucumber	 Beetroot
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CUCUMBER



 Corn	 Beans	 Raddish	 Cabbage
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LETTUCE



 Carrot	 Beetroot	 Parsnip	 Raddish
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PARSNIP



 Onion	 Lettuce	 Beetroot
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Plant Diversity



- Replicates Nature
- Increases Yield
- Decreases Pests
- Looks Better



Plant Relationships

- Fertilizers
- Repellants
- Attractants
- Nurse Cropping

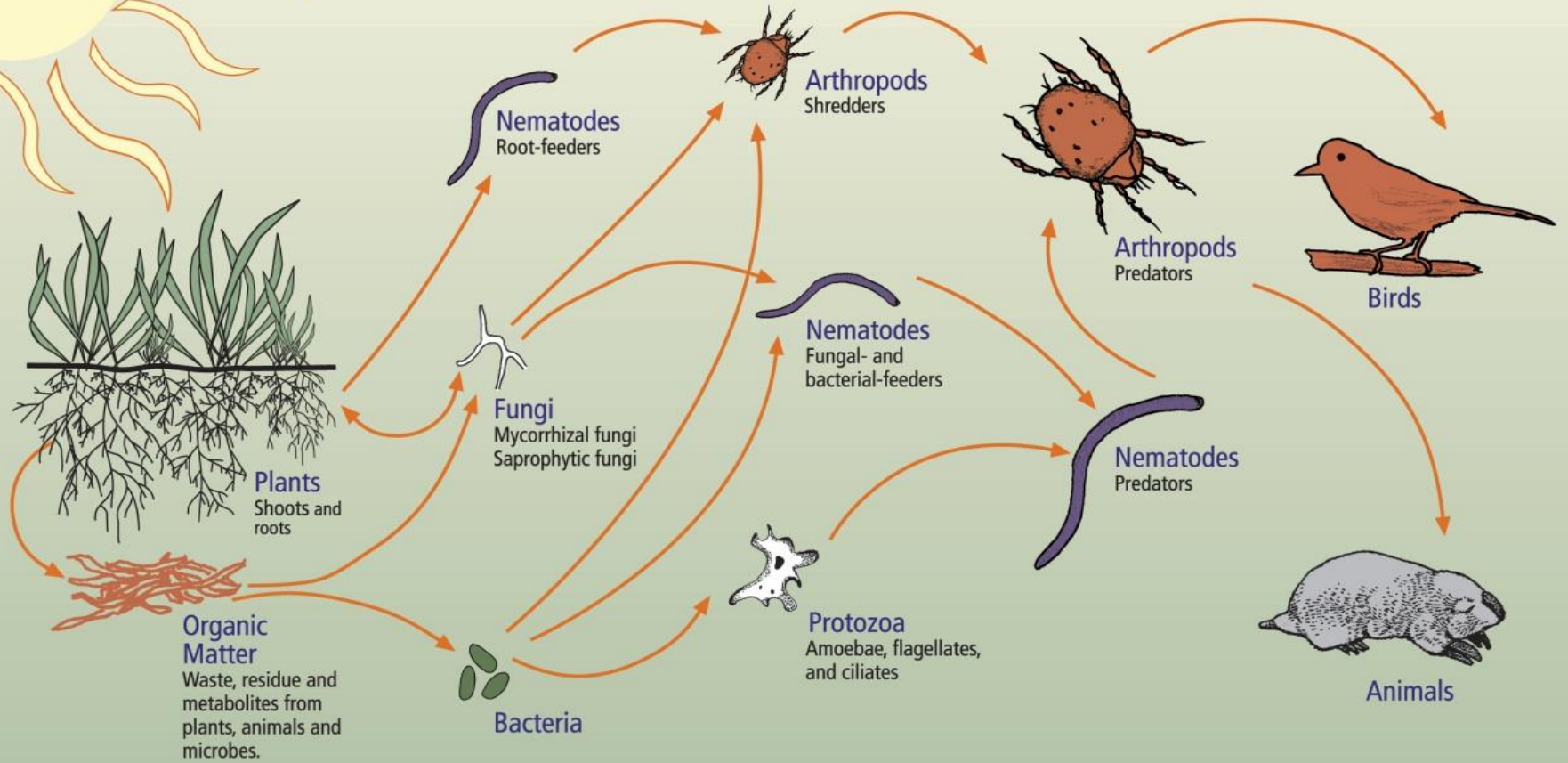


Plants that Fertilize



- Legumes “fix” Nitrogen
- Bio-mass crops Feed Soil Food Web
- All Plants Fertilize

The Soil Food Web



First trophic level:
Photosynthesizers

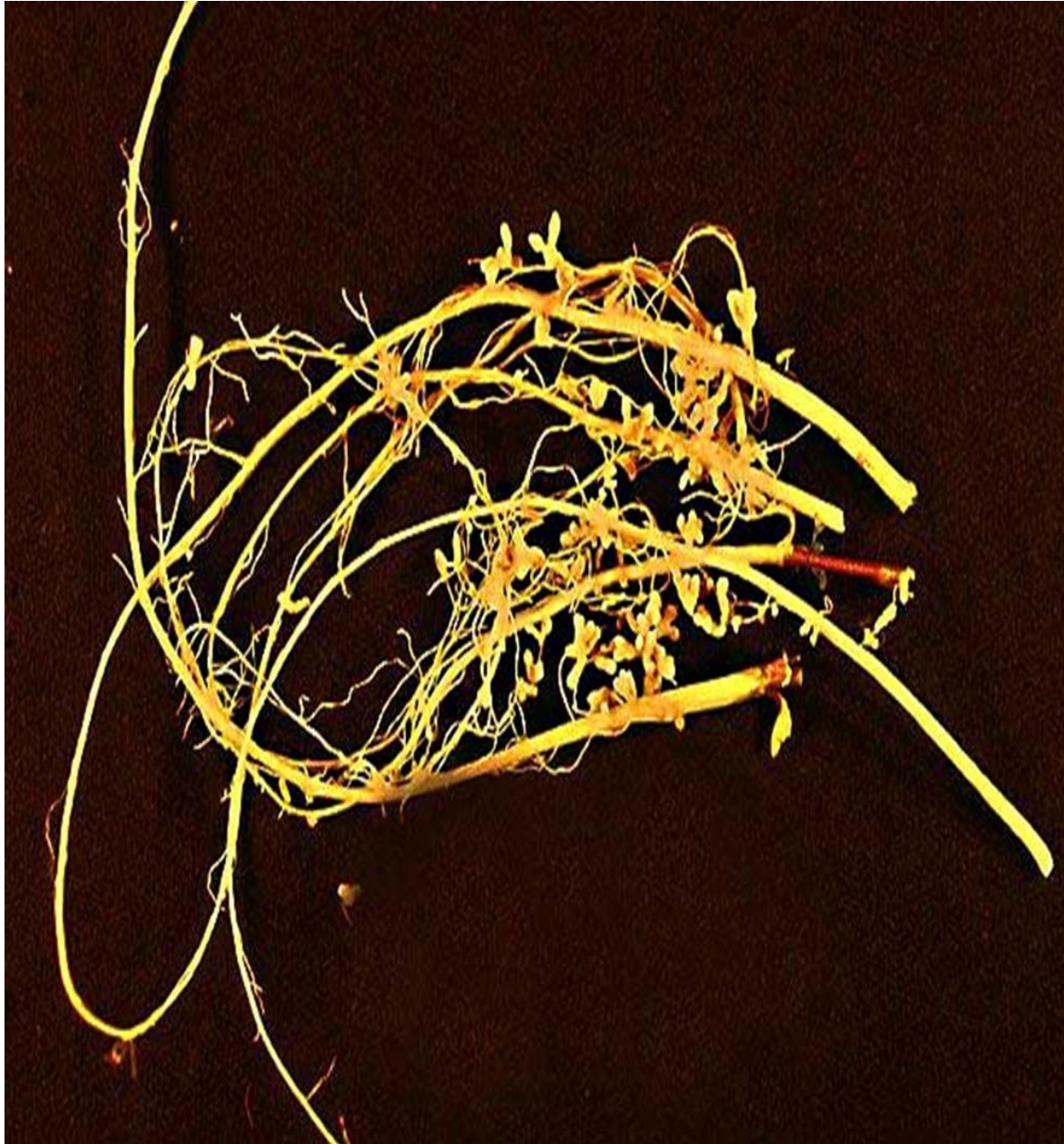
Second trophic level:
Decomposers
Mutualists
Pathogens, Parasites
Root-feeders

Third trophic level:
Shredders
Predators
Grazers

Fourth trophic level:
Higher level predators

Fifth and higher trophic levels:
Higher level predators

Importance of Legumes



- Crop Rotation
- Nitrogen Fixation
- Rhizobia

Prokaryotes in the nitrogen cycle

Atmospheric nitrogen (N_2)



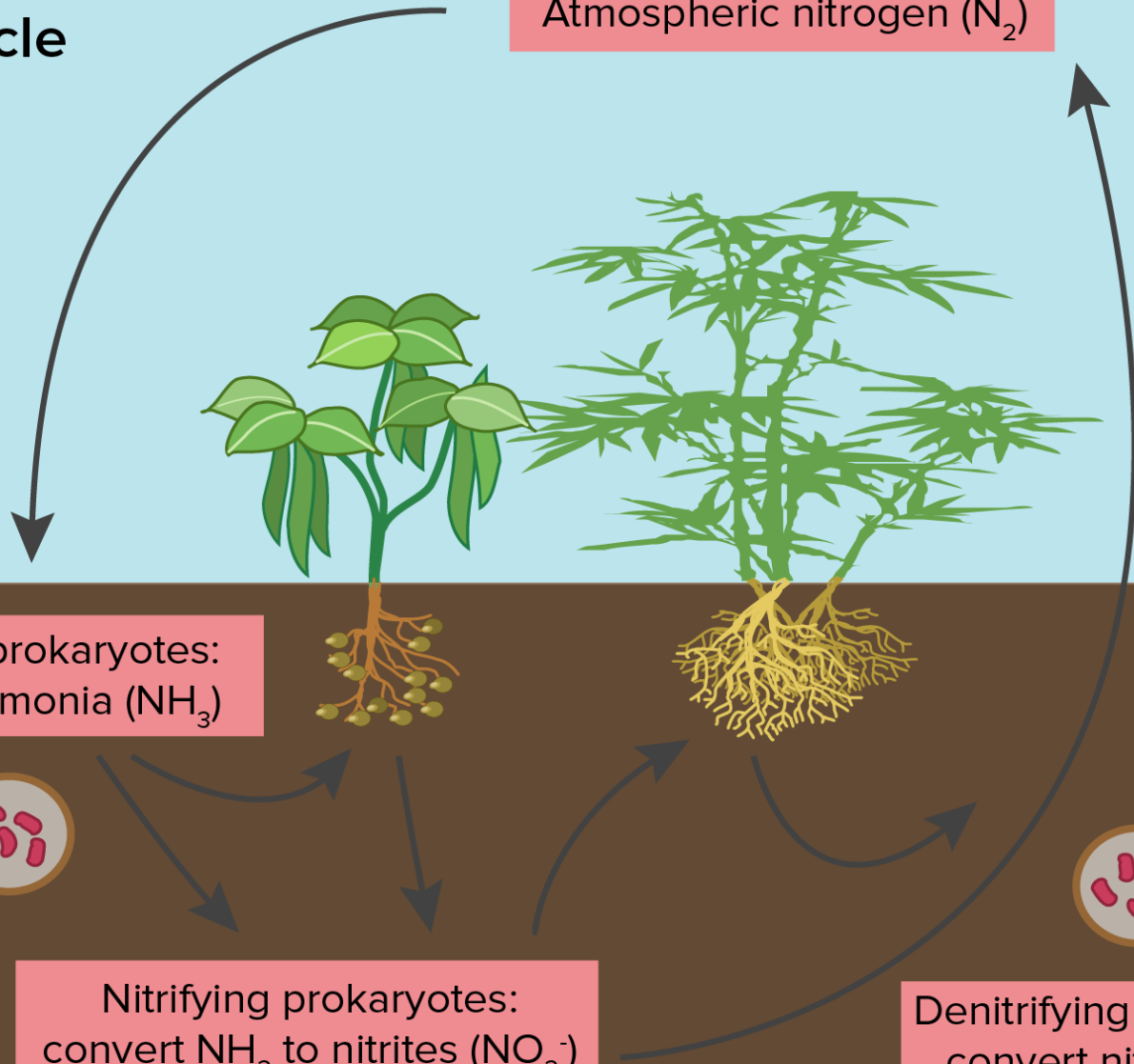
Nitrogen-fixing prokaryotes:
convert N_2 to ammonia (NH_3)



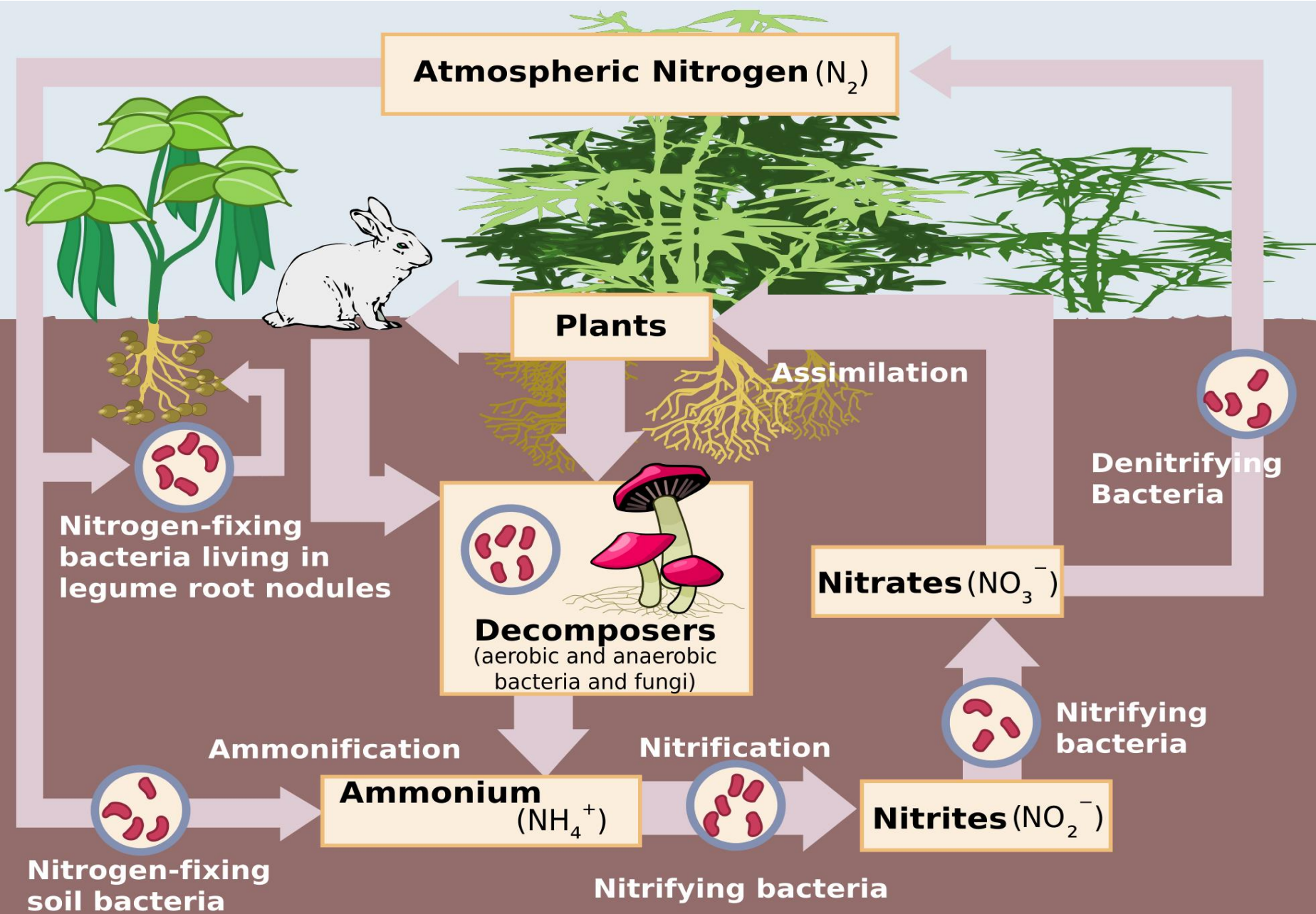
Nitrifying prokaryotes:
convert NH_3 to nitrites (NO_2^-)
and nitrates (NO_3^-)



Denitrifying prokaryotes:
convert nitrates to N_2



Nitrogen Cycle



How to Build Healthy Soils

- Eliminate Synthetic Pesticides/Fertilizers
- Encourage the Soil Food Web
- Use Compost and Compost Teas
- No Till or Low Till
- Use Supplements if Needed
- Grow Roots Not Plants



Growing Legumes



- Warm Season – Bush Beans, Lima
- Hot Season – Pole Bean, Tepary, Cowpea
- Cool Season – Peas, Garbanzo and Fava

Cool Season Legumes

- Peas
 - Sugar Snap
 - Snow Pea
 - Shelling
- Fava
 - Tough to Grow
- Garbanso or “Chickpea”
 - One Seed Pima Cty.



Plants that Repel Pests



- Strong Smelling
- Alliums
- Herbs
- Flowers



Tucson
Organic
Gardeners

soiling our hands since 1971

TUCSON ORGANIC GARDENERS PLANTING GUIDE

FOR TUCSON AND THE LOW DESERT

Jan 1 – Feb 15

FROM SEED

Arugula, Broccoli, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Collards, Dill, Fennel, Kale, Lettuce, Mustard Parsley, Bulb Onion (See Graphic), Potato

FROM SEEDLING TRANSPLANT

Artichoke, Broccoli, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Collards, Dill, Fennel, Kale, Lettuce, Mustard, Parsley, Spinach, Swiss Chard.

April 15 – May 31

FROM SEED

Amaranth, Basil, Cantaloupe, Cowpea, Cucumber, Malabar Spinach, Melon, Okra, Sorghum, Sweet Potato Slips, Summer Squash, Watermelon

FROM SEEDLING TRANSPLANT

Basil, Eggplant, Pepper

July 15 – August 31

FROM SEED

Bush Beans, Pole Beans, Corn (all types), Cowpea, Cucumber, Cantaloupe, I'tois Onion (See Graphic), Pumpkin, Sorghum Summer and Winter Squash

FROM SEEDLING TRANSPLANT

Tomato (July 15 - Aug 15)

Oct 15 - Nov 15

FROM SEED

Beets, Carrots, Garlic, Greens, Lettuce, Mustard, Pea, Radish, Turnip, Wheat (December – January)

FROM SEEDLING TRANSPLANT

Broccoli, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Collards, Dill, Fennel, Kale, Lettuce, Mustard Parsley, Spinach, Swiss Chard

LATE WINTER

SPRING

LATE SPRING

EARLY SUMMER

MONSOON

EARLY FALL

LATE FALL

March 1 – April 15

FROM SEED

Amaranth, Basil, Bush Bean, Corn (Sweet), Cucumber, Jerusalem Artichoke, Malabar Spinach, Melon, Pumpkin, Sesame, Sorghum, Summer and Winter Squash, Tobacco, Watermelon

FROM SEEDLING TRANSPLANT

Basil, Eggplant, Pepper, Tomato, Tomatillo

June 1 – June 15

FROM SEED

Pole Beans, Cantaloupe, Cowpea, Melon, Sweet Potato Slips

Sep 1 – Oct 15

FROM SEED

Arugula, Beet, Bok Choy, Broccoli, Brussels Sprouts, Cabbage, Carrot, Cauliflower, Celery, Chia, Chicory, Chinese Cabbage, Cilantro, Collards, Escarole, Fava, Garbanzo, Greens, Kale, Kohlrabi, Leek, Lentils, Lettuce, Mache, Mustard, Onion (See Graphic), Parsley, Parsnip, Pea, Radish, Rape, Rutabaga, Turnip, Spinach, Swiss Chard

FROM SEEDLING TRANSPLANT

Broccoli, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Dill, Fennel, Kale, Lettuce, Mustard, Parsley, Spinach, Swiss Chard

ONIONS



"SHORT-DAY" BULB ONION SETS
January 1 – February 15

TOHONO O'ODHAM I'TOIS MULTIPLIER ONION
July 15 – February 1

GREEN BUNCHING/SCALLION
August 15 – February 1



What is an Herb?

- Any Plant used for Flavoring, Medicine, or Perfume.
- Herbs: Leaves & Flowers
- Spices: Seed, Bark, Root



Growing Habits of Herbs



- Annual Herbs: Live Only One Season
- Biennial: Live Two Seasons
- Perennial: Live Longer than Two Seasons

Plants that Attract Beneficials

- Anything with a Flower
- Native Plants
- Flowers all year
- Good Bug Blend



Carrot Family Herbs



- From Milder Climates
- Tend to be Cool Season Biennial or Annual
- Grow well From Seed
- Can be Used as Herb, Spice, or Vegetable
- Excellent Companion Plants

Celery

- Grown for Leaves and Ribs or Stalks
- More Leafy in our Climate
- Mirepoix Staple



Cilantro



- World's Most Consumed Herb
- Grow "Slow Bolting" Types
- Harvest Seed as Corriander

Dill

- Great Butterfly Attractor
- “Mammoth” Type does Well
- Taste of Pickles
- Goes Well with Fish



Fennel



- Leaves used as Herb
- Stalk Used as a Vegetable
- Can Live Several Years
- Delicious Seed

Parsley

- Flat Leaf (Italian) Grows Well
- Curly Leaf (Hungarian) also good.
- Used Extensively in European Cooking
- Harvest Flat Leaf when Young and Curly when Mature.



Other Carrot Family Plants



- Angelica
- Chervil
- Culantro
- Lovage
- Mitusba

Plants that Attract Pests

- Trap Cropping
- Sacrificial Plants
- Susceptible Varieties
- Resistant Varieties



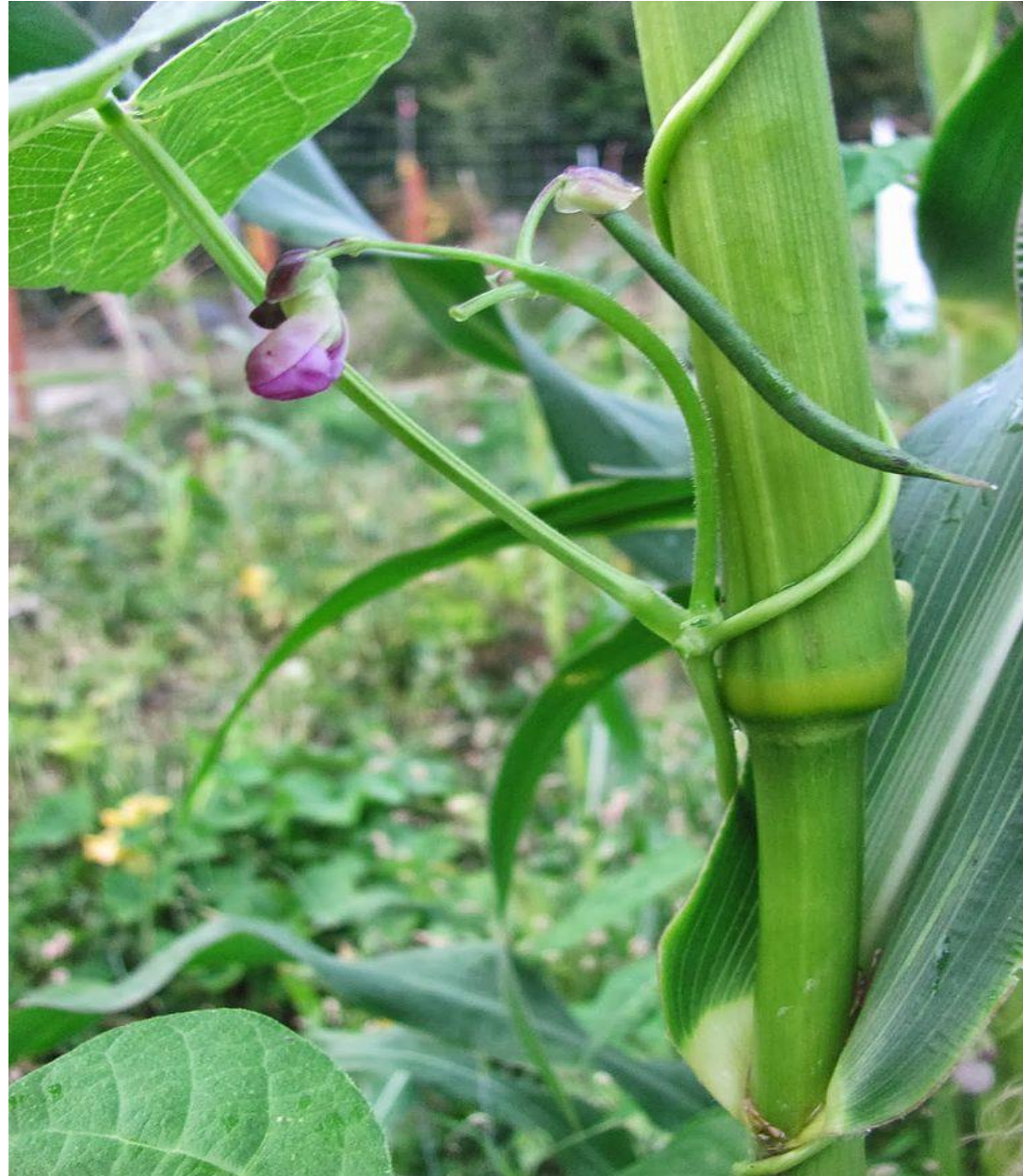
Nurse Cropping



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Growth Support

- Trellis Plants
- Tall Sturdy Plant
- Single Stalk
 - Corn
 - Okra
 - Sunflower



Shade and Humidity



- Sprawling and Vining Plants
- Weed Suppression
- Ground Covers
 - Winter Squash
 - Sweet Potato
 - Pole Beans



WWW.SOUTHWESTVICTORYGARDENS.COM/DOCUMENTS

RESOURCES

- Tanks Green Stuff
- EcoGro
- Reading List
- Gardening Clubs
- Local Businesses
- Friends and Family





Thank you!
(520) 576-7085