

Honey bee



Sweat bee



Squash bee



Mining bee



Leafcutter bee



Mason bee



Bumble bee



BUIST PARK: BIRDS, BEES AND BEYOND



Authentic Creations Publishing



Mural Arts Philadelphia

We believe that art ignites change.

Birds + Bees: A Trash Academy Project
Zine By: kuwa jasiri Indomela

Birds and Bees is a collaborative project with the community of Buist Park, Gamar Markarian, and Ron Whyte.

Lincoln Financial Mural Arts Center at the Thomas Eakins House

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Project partners

Lamar Gore, John Heinz Wildlife Refuge Manager

Shari Hersh, Project Manager

Kathleen Martin, Audubon Society PA project manager

Carolina Gomez, lead artist

Sarah Kolker, teaching artist

Briana Dawkins, teaching artist

Trash Academy youth assistants

Paige, Breyani, Merletta, Timell

ZINE

INSPIRED BY:

RON WHYTE and his relationship to the natural world.

DEDICATION TO: community partners (neighbors)

Donna Banks, Block Captain

Rhonda Davis, project artist

Christine Jones, gardener

Linda Emanuel, Tina Robinson, Lisa Young, Stephanie Peoples,

Nafes Bolden, Ariel Brown, Rose Rush, Margie Wilkins,

Leroy Watson and those from the neighbourhood who show up!

This zine is a basic interpretation of Pollinators and their vital role in our ecosystem.

Contents

- the various types of pollinators
- how pollinators contribute to our existence
- how pollination happens, the mechanics of it
- the relationship between plants and pollinator species
- Pollinators Natural Corridor colouring page
- Endangered Pollinators
- Extinction

LANGUAGE OF PAGES

Philadelphia, Pennsylvania is the
traditional homeland of the Lenape Indigenous People

Unami is a language spoken by the Lenape people

♪ ♪ ♪ Pura Fé - Sacred Seed

Welcome to the World Of Pollinators.

TYPES OF POLLINATORS

Bees, Wasps, Beetles, Butterflies, Flies, Bats, Birds, Moths, Ants, other Small Mammals, Lemurs, Wind, Rain

Pollinators as a group transfer pollen between colourful flowers with dazzling patterns that give off seductive scents. There are an estimated 300,000 species of Pollinators.

Insect Pollinators are themselves the base food group for 90% of birds, lizards, spiders, and fish.



Pipevine Swallowtail Butterfly

Leatherwing
Beetles

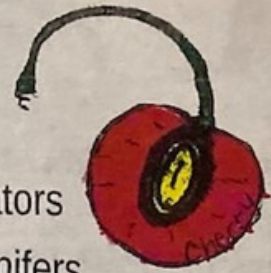
Beetles are
the first
Pollinator to
evolutionarily
emerge.



1 kweti (kwuh-tee)

The FACTS are these:

- ~ Insects are more efficient than elemental Pollinators
- ~ Wind pollinates the majority of Grasses and Conifers
- ~ Pollen has a rough surface and is high in protein
- ~ Flowers can have ultra-violet color patterns that direct Pollinators



These require pollination:

- ~ 1/2 of the oils, fibers and raw materials
- ~ 1 of every 3 bites
- ~ 60% of wildlife diets
- ~ 75% of flowering plants
- ~ 100 government agricultural crops

Why BEES are the most important?

The Bees main source of protein dense food is pollen.
Other Pollinators eat insects, small mammals and fruit
while pollen is more of a supplement to their diet.



POLLINATION HAPPENS IN THE FLOWER

There are two cycles in the flower. The flower produces pollen grains in the stamens and fruit forms from the pollinated carpels. Once the carpel is fertilized the use of the petals and stamens are no longer needed and they wither.

This initiates the reproduction process and development of Seeds and/or fruit. The Pollinator-Flower relationship is a ever evolving natural process of specialized adaption.

3 naxa (nah-hah)

Seed and fruit
Producing

CARPEL

Cherry Flower

Pollen producing
STAMEN

anther

pollen sac

filament



Two Cycle
ANATOMY



Brush-Footed Butterflies



Red Velvet Ant

Sweat Bee



Blue Orchard Mason Bee

Northern Cardinal



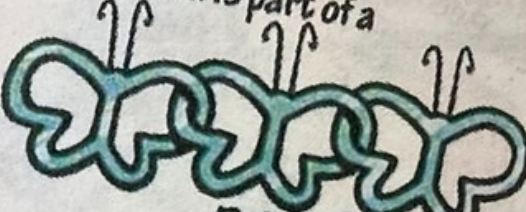
American Pelecinid Wasp

Eastern Yellowjacket





Monarch Butterfly

My garden is part of a

 Pollinator Link



...the project examines the interconnectedness

BEY

Poll

Polli
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 ~ Pla
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 ~ Joi
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4 newa (nay-wah)

BEYOND FRUITS, VEGETABLES AND NUTS

Pollinators sustain plantlife that releases oxygen, supplies medicine, prevents hillside and waterway erosion, builds topsoil, captures carbon, and creates pristine habitat for all life forms.

DID YOU KNOW?

Pollinators are dying at an alarming rate. Due to the severe loss of habitat, natural corridors, native plants and the extreme use of pesticides, herbicides and landscape chemicals.

Of course global warming and bio-chem diseases are making life more strenuous for Pollinators. **You can help!** Do what you can:

- ~ Advocate for natural spaces in your town
- ~ Plant native species
- ~ Spread this information
- ~ Join local initiatives that support Pollinators
- ~ Buy organic, non-pesticide foods
- ~ Identify the Pollinators that visit you



Song Sparrow

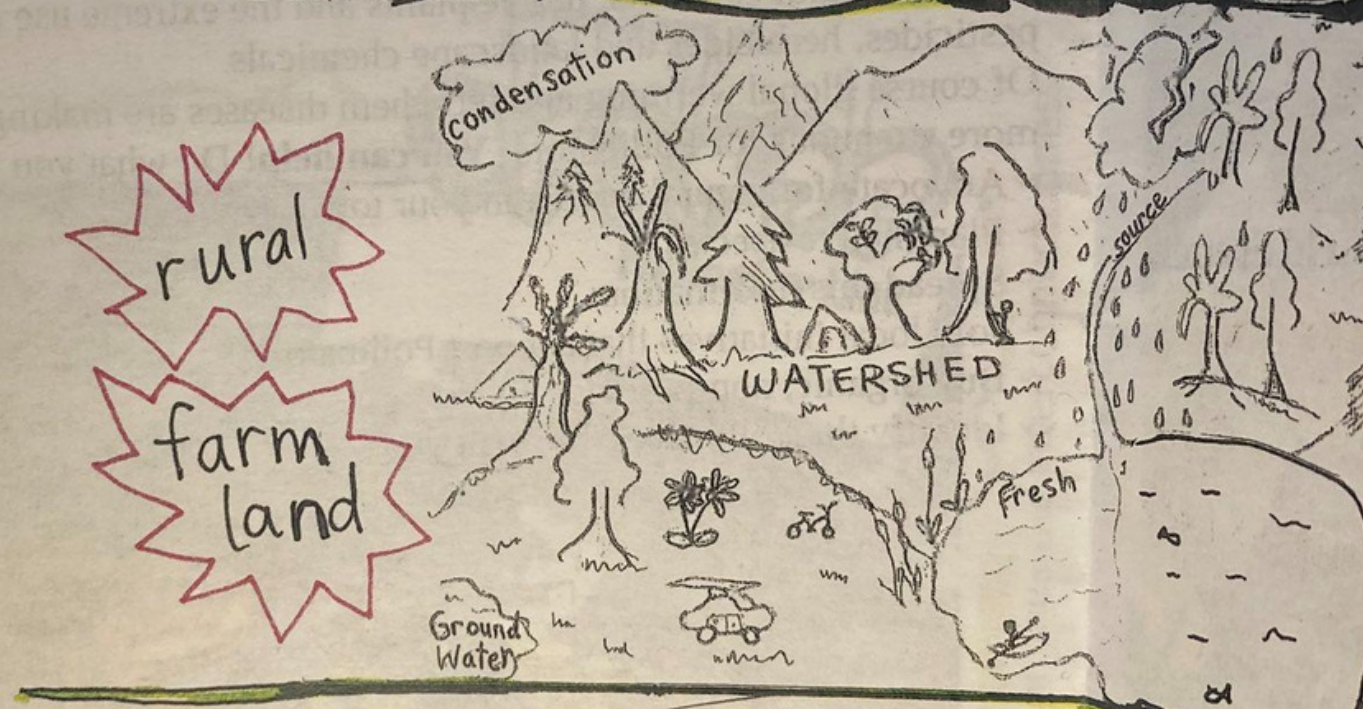
5 palenaxk
(pah-leh-nahxk)

NATURE
CORRIDORS
high
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V
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low

wild



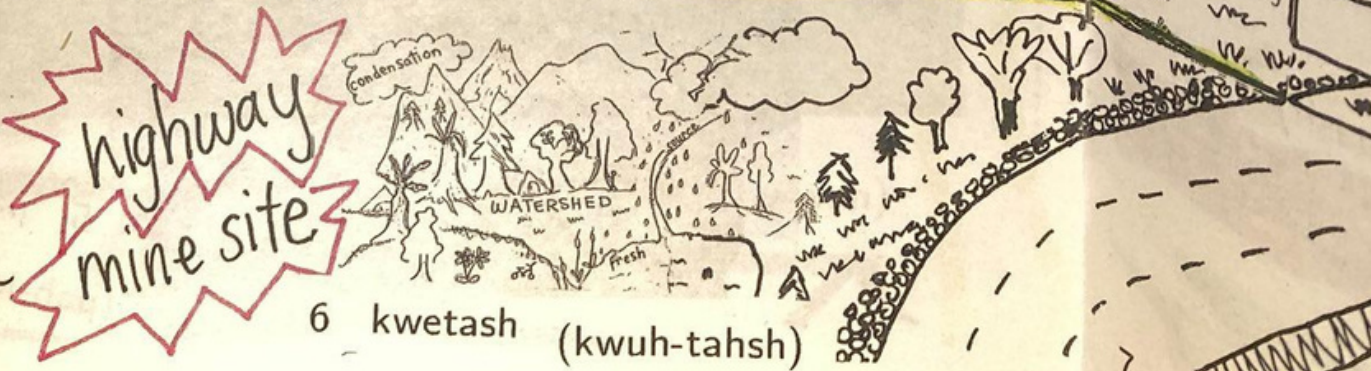
rural
farm
land

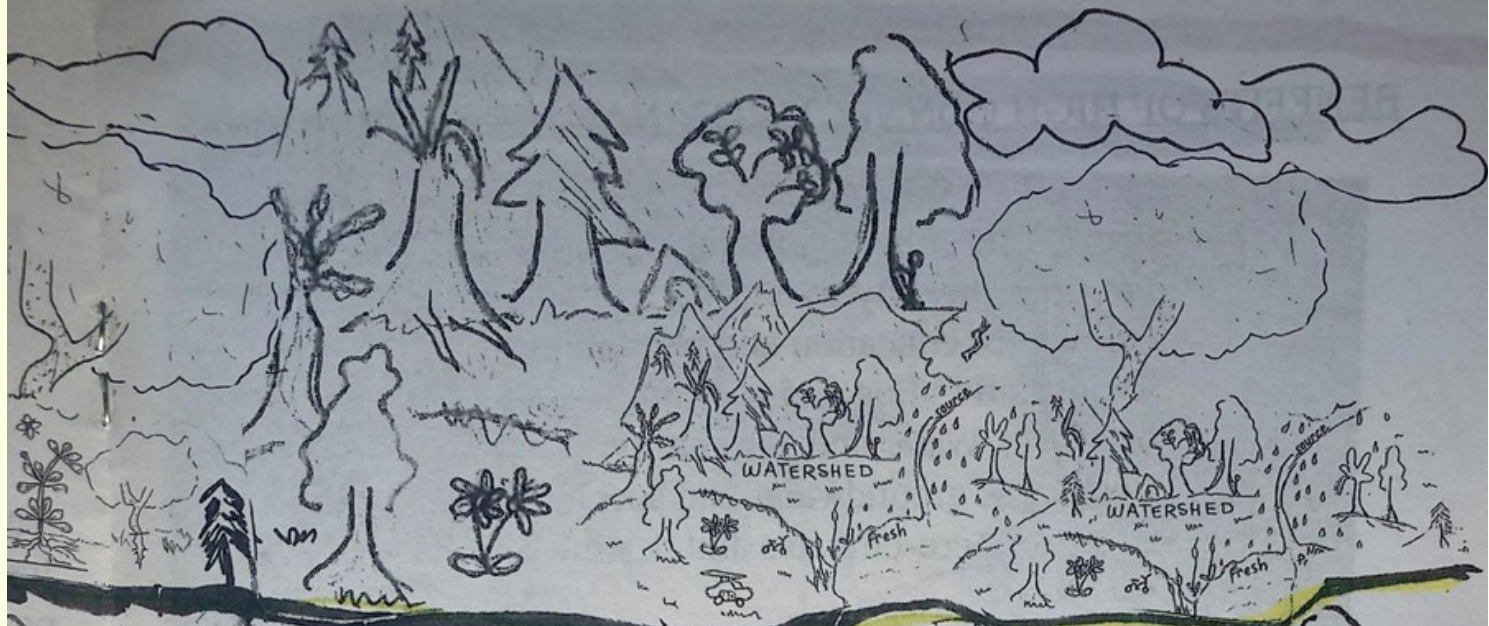


urban
cities



highway
mine site





7 nishash (nee-shahsh)

BENEFITS OF HIGH CONNECTIVITY NATURAL CORRIDORS

Increases crop yield and biodiversity
Creates sustainable jobs and social interaction
Promotes healthy living and native habitat
Allows for education and recreation
Reduces flooding and erosion
Improves Water and Air quality
Recharges groundwater and species diversity
Creates micro-climates and nesting ground



• Field Sparrow

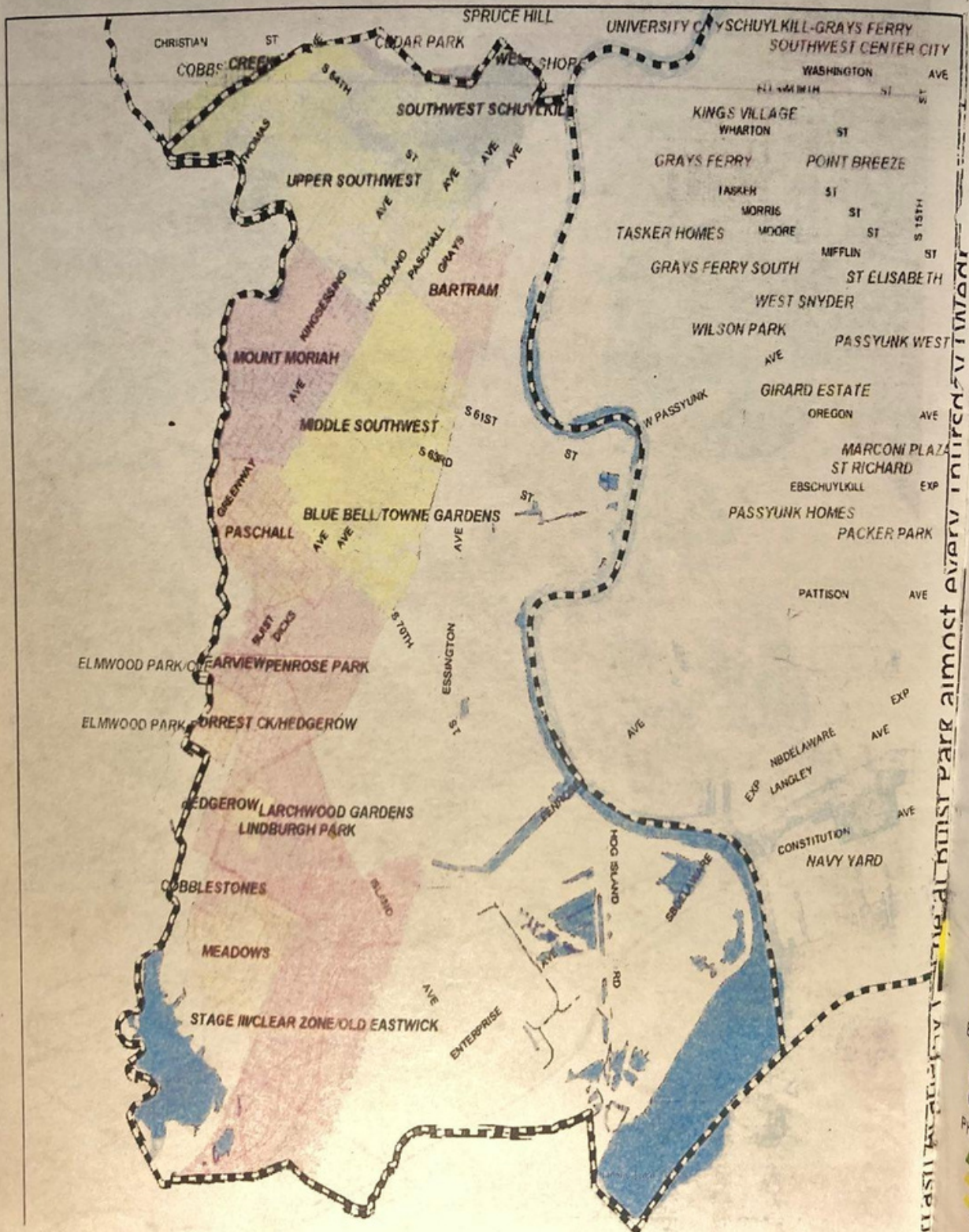


8 xash (xhash)



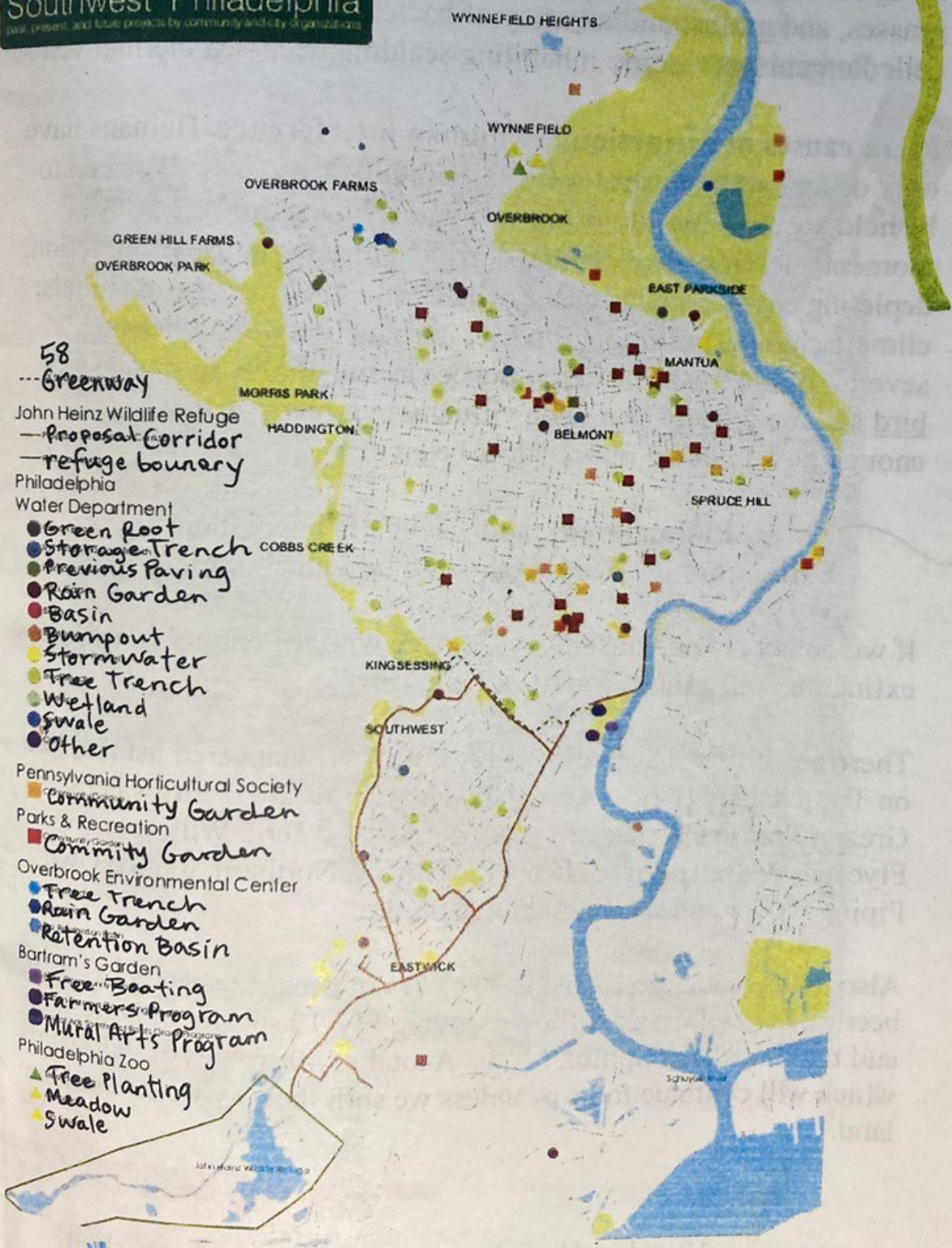
LAMAR GOPE

Southwest Corridor



10 telen (dell-uhn)

JOHN HEINZ WILDLIFE REFUGE 2016 MAP OF
Southwest Philadelphia
past, present, and future projects by community and city organizations



- 58
 --- Greenway
 --- Proposal Corridor
 --- refuge boundary
- Philadelphia
- Water Department
- Green Roof
 - Storage Trench
 - Previous Paving
 - Rain Garden
 - Basin
 - Bumpout
 - Stormwater
 - Tree Trench
 - Wetland
 - Swale
 - Other
- Pennsylvania Horticultural Society
- Community Garden
- Parks & Recreation
- Community Garden
- Overbrook Environmental Center
- Free Trench
 - Rain Garden
 - Retention Basin
- Bartram's Garden
- Free Boating
 - Farmers Program
 - Mural Arts Program
- Philadelphia Zoo
- ▲ Free Planting
 - ▲ Meadow
 - ▲ Swale

11 telen ok kweti (dell-uhn ahk kwuh-tee)

~ EXTINCTION ~

Planet Earth teems with life and includes thousands of species of vertebrate animals (mammals, reptiles, fish, and birds); invertebrates (insects, crustaceans, and protozoans); trees, flowers, grasses, and grains; and an array of bacteria, and algae, plus single-celled organisms—some inhabiting scalding deep-sea thermal vents.

Main causes of extinction are human interference. Humans have only occupied the Earth for the last 50,000 or so years. We need to be held accountable for all the ecological havoc during our brief moments: tearing apart natural corridors during resource extraction, depleting entire populations of whales and other marine mammals; climate change, pollution, disease, introduction of non-natives, several plastic trash islands in the ocean and eliminating the dodo bird and the passenger pigeon virtually overnight. Are we wise enough now to cease our reckless behavior?

→ **Endangered:** rapid decline in population

Extinction: the death of the last individual of the species

If we do not change the way we engage with the natural world, mass extinction will continue and end with us!

There are at least 18 species of birds on the endangered list that live on Turtle Island (North America). These birds are the Attwater's, Greater Prairie Chicken, Roseate Tern, Least Tern, Willow Flycatcher, Bell's Vireo, Seaside Sparrow, Northern Spotted Owl, Piping Plover and the Loggerhead Shrike.

Also on the endangered list is 7 species of bees, 12 species of beetles, the Delhi Sands Flower-loving Fly, 19 species of butterflies, and the Blackburn Sphinx Moth. A total of 40 species of Pollinators which will continue to grow unless we shift the way we steward the land.

12 telen ok nisha

(dell-uhn ahk nee-shah)

There is some help and protection by federal, state, and tribal governments mainly implementing laws and the creation of parklands and reserves. Although this does support the strengthening of Pollinators we must remember that governments are the ones who, in the first place, decided to deploy harmful practices that led to mass extinction and genocide.

American Goldfinch



13 telen ok naxa

(dell-uhn ahk nah-hah)

Thrive

Reflection

Change your community, change the world.

When you say, "I am going to throw this away"...where is away?

How can you change the way you interact with landscape to be more Pollinator friendly?



In what ways are women and nature connected?

What natural resources do you use?

What ways can you shift your consumption habits?

What native species can you plant in your community?

Who are the Indigenous tribes where you live?

95% OF NATIVE BEES DO NOT STING!



Carpenter
Bee

Change your
PERSPECTIVE

RESOURCES

✿ the grid <https://www.gridphilly.com/grid-magazine/2019/4/30/the-missing-link-refuge-works-to-build-a-bridge-for-pollinatorsand-peace-for-city-dwellers>

✿ **POLLINATOR PARTNERSHIP**
<https://www.pollinator.org/pollinators>

✿ **Attracting Native Pollinators Book**
By: The Xerces Society and Storey Publishing

Organizational Partners

John Heinz National Wildlife Refuge at Tinicum
Audubon Society PA, Southwest CDC, Mural Arts Philadelphia
Restored Spaces, Deep Green Philly

✿ The Pollinator Corridors of Philadelphia
Presentation By Jefferson University

PENN STATE UNIVERSITY
extension.psu.edu/conserving-wild-bees-in-pennsylvania

— We need to think and act more locally. —

INTO THE
MINDSET

TRUST mimic mother nature

Protect → **Priority** ←
QUALITY
PURE GENETICS

THE
EXPERIMENTAL
FARM
NETWORK

WISDOM FROM A POLLINATOR

Be part of the solution

Smell the flowers

Let the Wind direct you

Explore natural habitats

Hum as you go through life



kuwa jasiri Indomela
(the one/this one) Pronouns
Founder of Authentic Creations

Photograph by: Tynia Dickson
in Blantyre, Malawi

ArtisticApothecary.wordpress.com

kuwa jasiri (first name) is a genderqueer, multi-lingual, artistic community organizer who collectively educates with, and about the wonders of Nature through workshops, medicine making, writing, seed harvesting, and majick. Additionally that one participates in Indigenous solidarity, while excelling at compassionate communication, and grassroots accountability processes that bring about equality.