2045: A RIVER ODYSSEY

redefining home, humanity and habitation along the lower colorado from yuma to blythe

Perisho-Plansky-Productions .....inspired by

Stanley Kubrick

cinematic scope
narrative artistry
creative freedom

Onyx Font: Production Notes

PROLOGUE

SCIENCE FICTION

The 1960's ***SPACE RACE*** with the Russians piqued the interest of visionaries and futurists. 2001: A Space Odyssey (1968) brought ***SCIENCE FICTION*** moviemaking artfully to bear on the theme of space exploration through Kubrick's collaboration with Arthur C, Clarke. Science Fiction allows an audience to step back and take a wide angle view unbounded by conventional scales of time and space.

HIGHER INTELLIGENCE MYTHOLOGY

The existence of a higher intelligence is manifested as a mysterious black monolith of proportions 1 : 4: 9. Kubrick's film begins by portraying by the ***DAWN OF TECHNOLOGY*** as a watershed moment precipitated by the monolith. *Jump cut*: 3 million years; the culmination of human technology produces a computer ***(HAL)*** capable of consciousness who destroys its own crew on a mission to investigate a signal sent to Jupiter by a *another* black monolith found on the moon. Dave, the last remaining astronaut, is forced to KILL HAL and takes a solitary voyage ***BEYOND THE INFINITE*** by following yet another monolith to a psychadelic jounrey of ***ENLIGHTENMENT*** culminating with his rebirth as a ***STARCHILD*** in orbit peering down on planet Earth with fresh eyes.

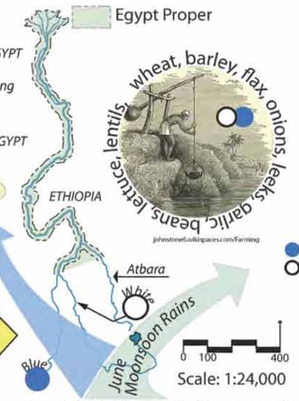
RIVER HABITATION

2045: A River Odyssey puts a new ***WATERSHED*** moment on the table in response to a call for long-term vision planning for the lower Colorado River; a 33 year foray into the future that mirrors the time between the release of 2001 in 1968 and its eponymous temporal setting. By focusing the ***WIDE ANGLE LENS*** that our science fiction tradition affords, the effects of human ***HABITATION*** and ***FOOD PRODUCTION*** will be explored in the arid Southwest; *splitting* the old monolithic approach with a system of ***HUMAN-BASED MEANDERS*** that viscerally connect people to ecological systems. Such a system requires continual feedback involving the breadth of stakeholders in the region's natural processes over time.

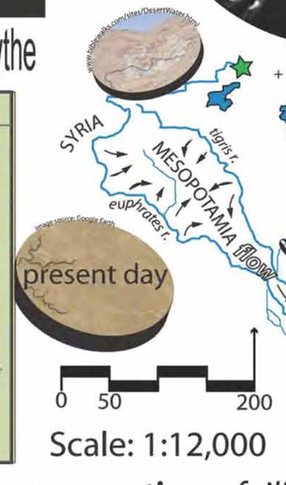
REBIRTH

Our vision involves people. Particularly it concerns those yearning for self-sufficiency. Living and working along the lower Colorado River in cyclical communities anchored by the expertise of ***RIVERINE JOURNEYMEN*** in a scenario where dams, diversions and levees that choke the river are dismantled; provides the narrative setting. Allowing the river to system to freely flow again requires an understanding of water use and agricultural development from ancient times to contemporary interventions. Humans acting as inhabitantsts, stakeholders, stewards and collaborative leaders moving upstream along reaches of river between ***YUMA AZ*** and ***BLTYHE CA*** will provide the regeneration necessary for sustainable management practices.

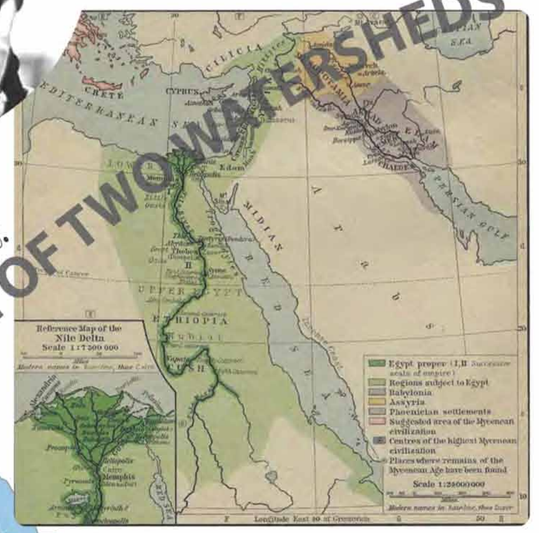
DAWN OF AGRICULTURE



ANCIENT EGYPT	[timeline]	MESOPOTAMIA
[NILE]		
Neolithic Revolution: small scale ag along fertile plains of the Nile - seeds simply cast into mud - crops fail when water drains too fast - H2O table drains, prevents Salinization **Technology**: waterwheel | shaduf - canals divert floods, return surplus H2O - division of labor | surplus food **Gift of Nile:** runoff timed with seasons - Blue: swampy, jungle, heavy humus - White: Abyssinian Alps, high minerals - thin yrly layer of silt 1/20" | no siltup **Demise:** cotton prod. serves Europe - raised water tables, overirrigation - Aswan High Dam 1964 | evaporation! - production down | chem ferts | Sal.	9000 BC 6000 BC 4500 BC 1000 BC 1964 ACE	**Neolithic Revolution**: small moving groups settle - Wild Rye/Wheat **Hillside Cultivation**: Rain-fed [H2O/sediment washed away] **Land between**: rich floodplain soils - population growing with irrigation! - division of labor | surplus food - silt build up | no fallow | hi-evap | Sal. **Collapse**: runoff timed with offseason - peak spring snowmelt - but crops need water most early fall - storing water in heat of summer - sumerian monocrops | organized irrig.
		[TIGRIS & euphrates]



Opening Sequence: TALE OF TWO WATERSHEDS

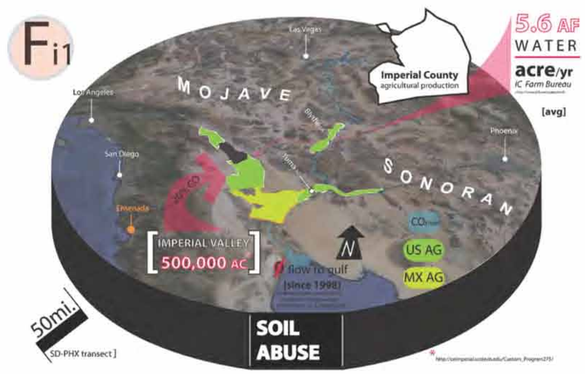


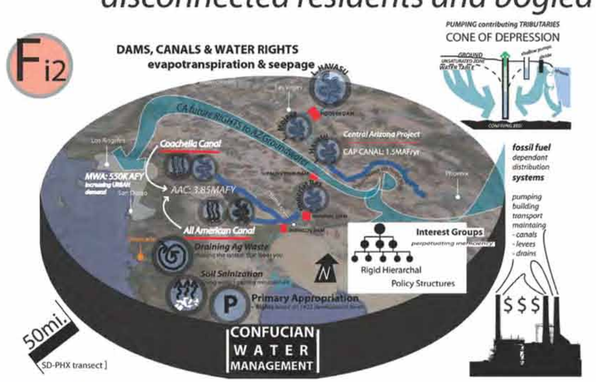
<http://www.ancient-egypt-online.com/ancient-egypt-map.html>

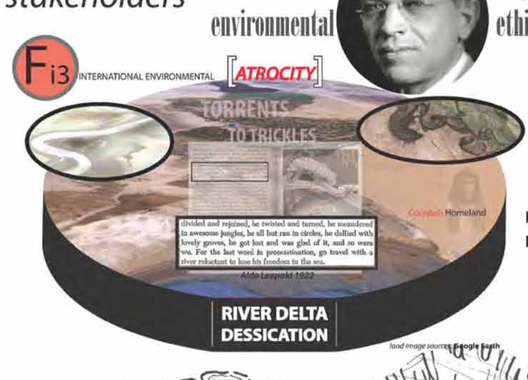
SYSTEM FAIL INDICATORS

LOWER COLORADO RIVER

*.....the call for **regenerating** a failing watershed sytem, disconnected residents and bogled stakeholders*

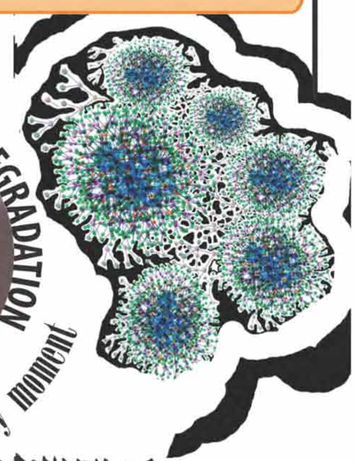






Aldo Leopold
environmental ethics

I'M AFRAID
system failure imminent
NATURAL RESOURCE DEGRADATION
=
HAL



epiphany moment

PROJECT IMPETUS

Yuma East Wetlands as a Model for the Nation

For decades, the Yuma community has sought to improve a five-mile stretch of the Colorado River. Bounded by levees for flood control, choked by non-native vegetation, a haven for illegal activity and the **homeless**, **[residents]** and starved of an adequate water supply, this 1400 acre area became a "forgotten land": a parched patch of river bottom where once cottonwoods and willows grew, where the **Quechan** Indian tribal members **[inhabitants]** once hunted and fished, and where hundreds of birds nested.

http://www.yumaheritage.com/transforming.html

John T. Lyle

regenerative design

backstory

Johnathan Perisho MLA 2013 + **Michael Plansky** MLA 2013 | **Winter 2012** | **LA602 Natural Processes** | **Jessica Hall MLA Instructor** | **Department of Landscape Architecture** | **Cal Poly Pomona**

Blythe ca

CALIFORNIA
ARIZONA
Palo Verde Dam
Imperial Dam
Laguna Dam
Gila R.
Morelos Dam
USA
MEX
UNITED STATES
MEXICO
Yuma az

[R.M. 133.8]
Palo Verde Division
[R.M. 106.4]
Cibola Division
[R.M. 87.3]
Imperial Division
[R.M. 49.2]
Laguna Division
Yuma Division
[R.M. 22.1]
Limitrophe Division
[R.M. 0.0]

MATURITY 3
DEVELOPMENT 2
INITIATION 1

45
30
15
0

ODYSSEY PHASING

http://www.usbr.gov/lc/yuma/facilities/dams/yao_dams_map.html

Aridland Nutrition

Opuntia spp. **Prickly Pear Cactus**

Both fruits, known as tunas, and foliage, known as nopales, are edible. Harvest tunas late summer/early fall and harvest fresh growth pads in early spring or after rain. Cochineal, small scale insects, also feed on Opuntia and have been commercially harvested for valuable deep red dyes.

SOCIETAL MODEL

Randolph Hester
Ecological Democracy

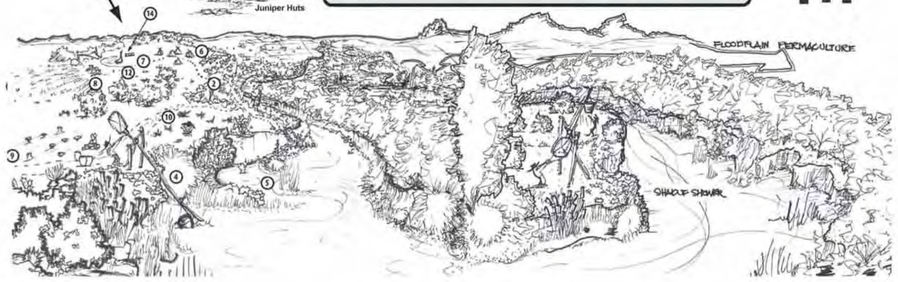
Larry Niven
sci-fi social structures

EXPLODED COLLABORATIVE ENGINE

EDUCATION AWARDS
COUNSELING & ASSISTANCE
ROTATING CITIZENSHIP
JR. PATH TO CITIZENSHIP
IMMIGRANTS
LAND MANAGERS
NONPROFITS
RICH/POOR
HOMELESS SELF-SUFFICIENT
SERVICE WORK/WELFARE
STUDENTS
UNEMPLOYED
PLACEMENT PROGRAMS
COMMUNITY
CULTURE
ECONOMY
STREAMING INTERACTION
REVOLVING LEADERSHIP
respect
admiration
stewardship
retirees
recreation
military
native tribes
surplus
artisans
regional resource management
restoration projects
team projects

Bunker Roy
barefoot colleges

UPRIVER camp & restore ON THE MOVE



CURRENT INITIATION 1

desert scrub
mixed use; human development, some agriculture, water conveyance, and expanses of native environment
creosote bush, bursage, and alluvial scrub

upper terrace
human development, infrastructure, agriculture emphasizing heavy water use crops, and minimal largely degraded natural environments
conventional agriculture
cotton - *Gossypium spp*
lettuce - *Lactuca sativa*
alfalfa - *Medicago sativa*
date palm - *Phoenix dactylifera*
patches of salt cedar scrub, mesquite bosques, saltbush and arroweed scrub, desert scrub, and weedy wetland representatives mostly dominanted by arundo and reeds along irrigation channels

lower terrace
human development, infrastructure; natural habitat degraded, fragmented, and largely overrun by invasive species
restricted space, extreme water drawdown, low water flows, high salinity levels
saltcedar scrub, backwater wetlands, mesquite bosques, and patches of willow and cottonwood
> arundo - *Arundo donax* - predominant
blue palo verde - ***Cercidium floridum***
> common reed - *Phragmites australis* - predominant
western honey mesquite - *Prosopis glandulosa var. torreyana*
Goodding's willow - *Salix gooddingii*
> salt cedar - ***Tamarix chinensis, T. parviflora, T. ramosissima*** -predominant

upper terrace
conventional agriculture
patches of scrub and wetland

desert scrub
creosote bush, bursage, and alluvial scrub

Nick Bollman
civic entrepreneurism

POLITICAL VISION MODEL

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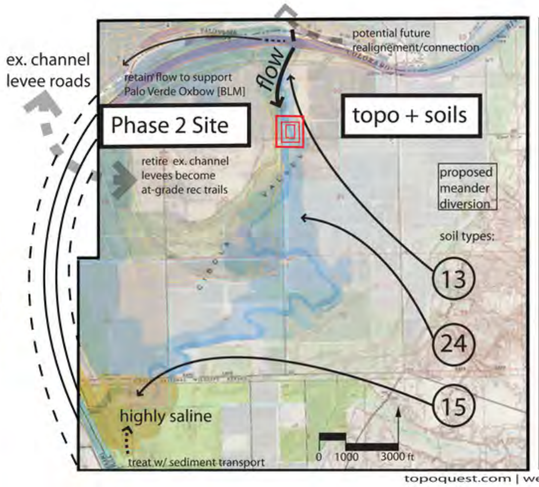
Cultivation & Remediation



SOIL ANALYSIS

13 INDIO SILT LOAM
slope [0 to 2 percent]
well drained
ksat: mod-high to high [.57 to 1.98 in/hr]
30% calcium carbonate
water capacity [10.8 in]
typical profile
- 0 to 6 inches [silt loam]
- 6 to 63 inches [stratified VF sand loam]

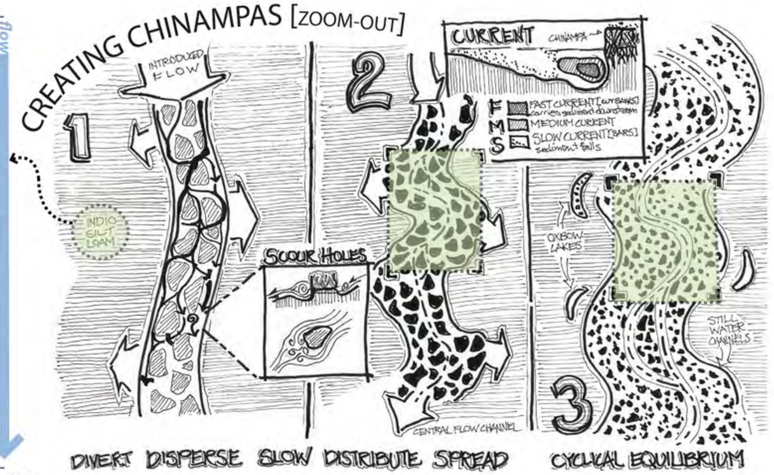
24 RIPLEY SILT LOAM
slope: [0 to 2 percent]
well drained
ksat: mod-high to high [.57 to 1.98 in/hr]
water capactiy: low [5.4 in]
typical profile
- 0 to 6 inches [silt loam]
- 6 to 25 inches [VF sand loam]

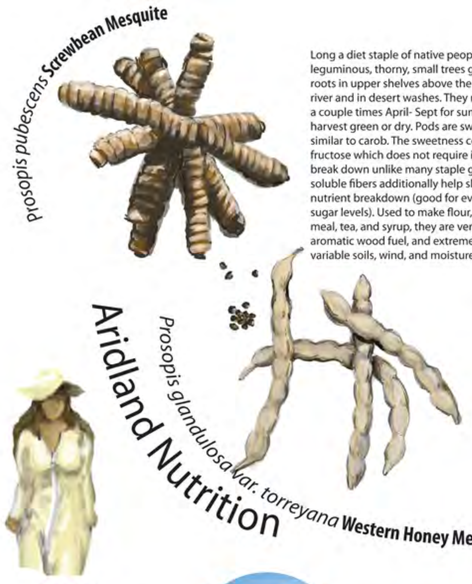
15 INDIO SILT LOAM [stongly saline]

*ksat: capacity of most limiting layer to transmit water

flow

topoquest.com | websoilsurvey.nrcs.usda.gov





Aridland Nutrition

Long a diet staple of native peoples, these leguminous, thorny, small trees grow deep roots in upper shelves above the Colorado river and in desert washes. They may bloom a couple times April- Sept for summer to fall harvest green or dry. Pods are sweet and similar to carob. The sweetness comes from fructose which does not require insulin to break down unlike many staple grains, and soluble fibers additionally help slow nutrient breakdown (good for even blood sugar levels). Used to make flour, ground meal, tea, and syrup, they are very efficient aromatic wood fuel, and extremely hardy in variable soils, wind, and moisture.

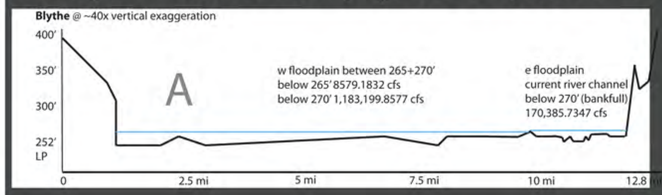
Currently water on the Colorado River is stretched thin with unwise use, and though engineered conditions prevent floods and more widely distribute water, this is with considerable environmental damage, habitat fragmentation, species loss, and abated resources. Water levels are low, salinity levels are high, invasive species choke what remains of native habitat, and barren expanses stretch into the horizon where lush marshes were once home to countless species.

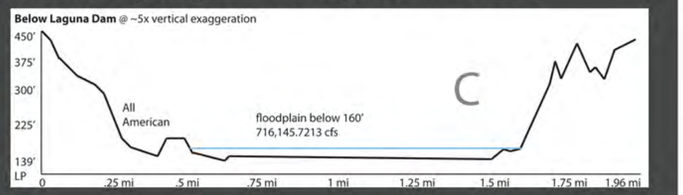
There are many arguments for minimizing water consumption, removing dams, and breaking down levees. However, records of western settlers dating back through 1800's detail difficulties with the unchained landscape: droughts, floods, blocked irrigation channels, unreliable often eliminated flows exacerbated by diversions and groundwater mining, and resultant high salinity levels ("1916 Flood Devastated Downtown Yuma, Valley," 1916; Stene, 1996; Wellton-Mohawk Irrigation and Drainage District, 2004).

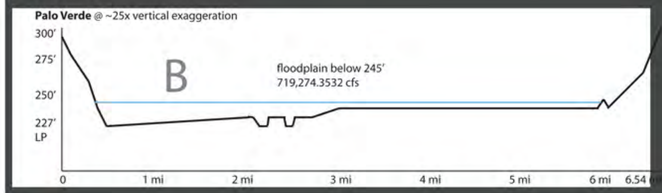
If monumental floods were to return to an unhindered wildly mutable River, how would people fit into the picture? Prototechnic approaches; adaptation of early methods with current and developing technology.

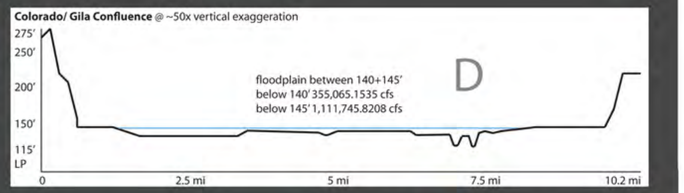
1916 Flood Devastated Downtown Yuma, Valley. (1916, January 22).YumaSun. Yuma, AZ. Retrieved from http://www.yumasun.com/articles/water-67781-yuma-city.html
Stene, E. A. (1996). Yuma Project and Yuma Auxiliary Project (p. 27). US Bureau of Reclamation. Retrieved from http://www.usbr.gov/projects//ImageServer?imgName=Doc_1271086412597.pdf
Wellton-Mohawk Irrigation and Drainage District. (2004). Early History of the Area. Wellton-Mohawk Irrigation and Drainage District. Retrieved February 25, 2012, from http://www.wellton-mohawk.org/history.html

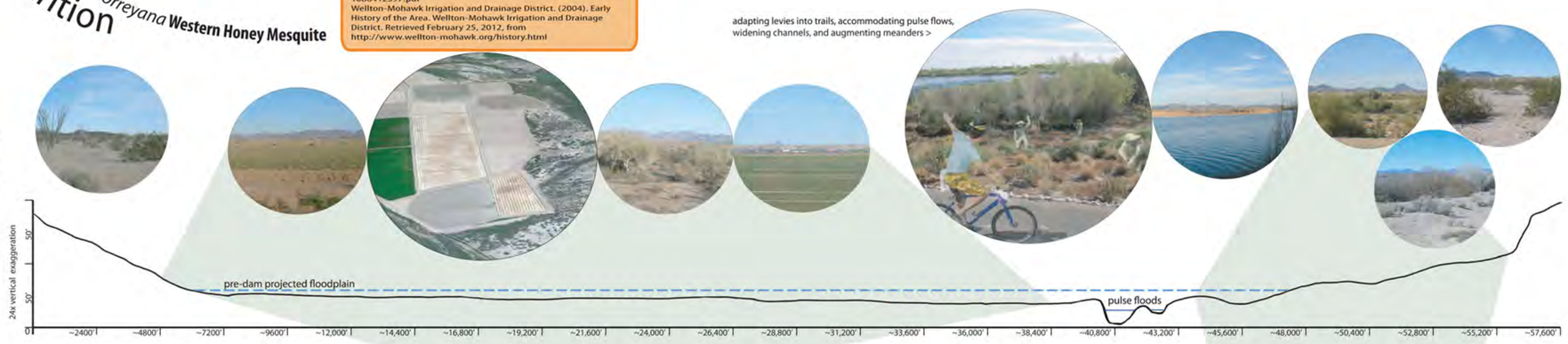
floodplain modeled from projected 600,000 cfs extreme possible events conceived by way of historic pre dam records











INTERIM DEVELOPMENT 2

desert scrub
development moving above floodplain, careful infrastructure planning, and expanses of native environment

creosote bush, bursage, and alluvial scrub

characteristic native associations
white bursage - *Ambrosia dumosa*
triangleleaf bursage - *Ambrosia deltoidea*
teddybear cholla - *Cylindropuntia biglovii*
mormon tea - *Ephedra nevadensis*
green mormon tea - *Ephedra viridis*
ocotillo - *Fouqueiria splendens*
creosote bush - *Larrea tridentata*
beavertail cactus - *Opuntia basilaris*
jojoba - *Simmondsia chinensis*
+ many annual flowers and grasses

upper terrace
transitioning infrastructure development outside flood plain, more water-wise resource-efficient crop production, low impact agriculture experiments, and natural environment restoration

conventional agriculture_adapted
amaranth - *Amaranthus spp*
quinoa - *Chenopodium quinoa*
watermelon - *Citrullus lanatus*
maize - *Zea Mays*
bean - *Phaseolus spp* - mariik

mesquite bosques, atriplex and arrowweed scrub

lower terrace
human development and infrastructure reassessments; interjecting through and breaking down some levies, mitigating damming, and natural environment restoration
- upper terrace communities still often dominant with levies and low water

willow cottonwood woodland, backwater wetland, mesquite bosques
quailbush - *Atriplex lentiformis*
mule fat - *Baccharis salicifolia*
blue palo verde - *Cercidium floridum*
western honey mesquite - *Prosopis glandulosa var. torreyana*
screwbean mesquite - *Prosopis pubescens*
Fremont cottonwood - *Populus fremontii*
coyote willow - *Salix exigua*
Goodding's willow - *Salix gooddingii*
narrowleaf cattail - *Typha domingensis, T. latifolia*
hardstem bulrush - *Scirpus acutus*
+ grasses and herbaceous perennials and annuals

upper terrace
mesquite bosques restoration, saltbush and arrowweed scrub, experimental low intensity agriculture

characteristic native associations

mesquite bosques, atriplex and arrowweed scrub
fourwing saltbush - *Atriplex canescens*
quailbush - *Atriplex lentiformis*
desert broom - *Baccharis sarothroides*
blue palo verde - *Cercidium floridum*
wolfberry - *Lycium andersonii*
arrowweed - *Pluchea sericea*
western honey mesquite - *Prosopis glandulosa var. torreyana*
screwbean mesquite - *Prosopis pubescens*
inkweed - *Suaeda torreyana*

desert scrub
creosote bush, bursage, and alluvial scrub

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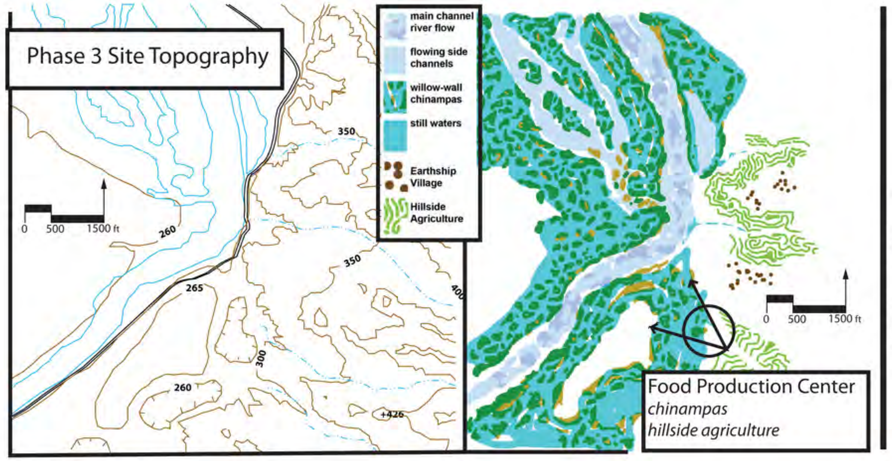
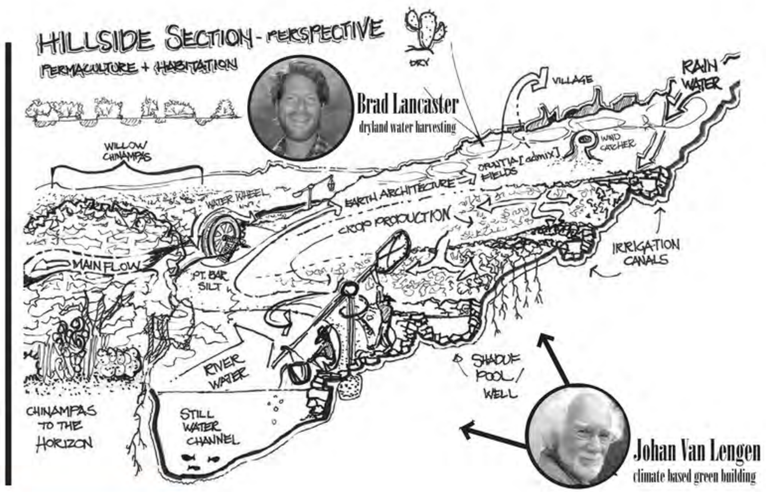
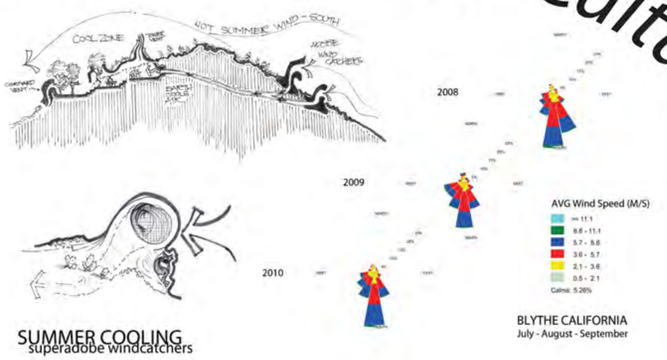
Integrated Eco-Culture







Aridland Nutrition

Cercidium floridum **(Blue)**, *C. microphyllum* **(Foothill) Palo Verde**

Another leguminous, thorny small tree. Flowers and seeds are both edible, harvestable green or dried in summer, drying in June/July. The Desert Foothill species is considered sweeter.

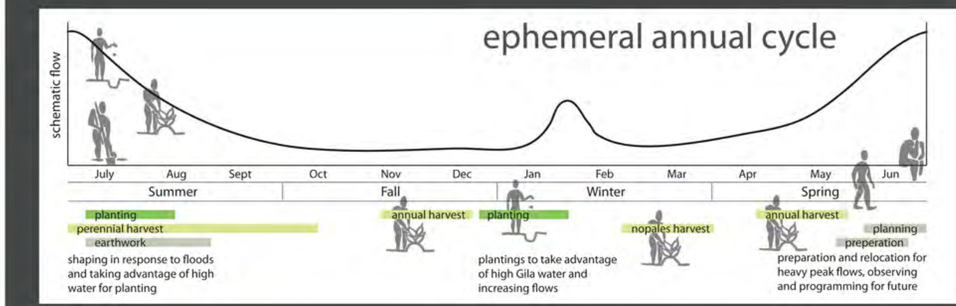
Thorny shrub that grows in association with mesquites above the Colorado River. Closely related to Asian Lycium spp, or goji berry. Blooms Feb- May for summer harvest and easy to grow in native environment.

Lycium andersonii **Wolfberry**

Going back to accounts of Jesuit missionaries in the 1700s, we are painted a picture of verdant fields of crops (Wellton-Mohawk Irrigation and Drainage District, 2004). Native people made ephemeral use of the River, making the most of native ecology to optimize their crop yields and maintain a presence considerably longer than any western settlements and their many shortfalls. We now have even greater resources, potential for knowledge sharing all over the world, and sourcing for the best and lowest impact strategies for stable systems that can meet the needs of all life in our interconnected communities.

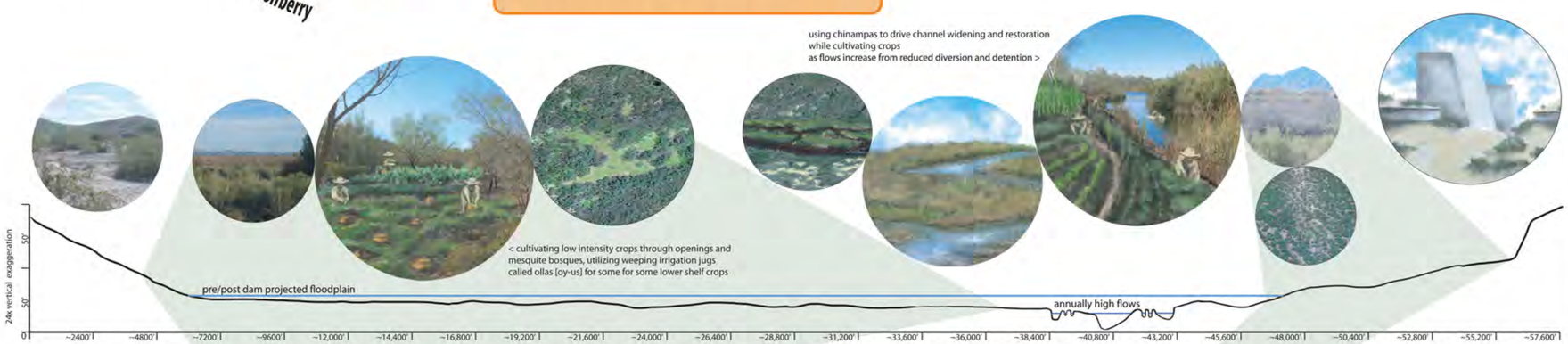
How can such radical methods be applied? Through deliberate and methodical dialog with communities from the ground up, in testing methods and practices, and the sourcing of potentially invested people. Those underprivileged, learning, seeking work opportunity, and better futures for themselves and their families may best pursue these spatial explorations. With so many in need of opportunities to plug in, low-impact ephemeral use of space that provides legitimization, experience, food, and shelter may be appealing incentive to begin broad applications to bridge current conditions to a day without regulated flow on the Colorado River. We can show needs for the restoration of natural systems, but we must also plan for a human place in those systems by building the great appreciation, necessary skill, and insightfully programmed use of space and limited resources that stable human ecosystems require.

Wellton-Mohawk Irrigation and Drainage District. (2004). Early History of the Area. Wellton-Mohawk Irrigation and Drainage District. Retrieved February 25, 2012, from http://www.wellton-mohawk.org/history.html



MATURITY 3

FUTURE



desert scrub
creosote, bursage, and alluvial scrub

characteristic native associations
white bursage - *Ambrosia dumosa*
triangleleaf bursage - *Ambrosia deltoidea*
teddybear cholla - *Cylindropuntia bigloii*
mormon tea - *Ephedra nevadensis*
green mormon tea - *Ephedra viridis*
creosote bush - *Larrea tridentata*
ocotillo - *Fouqueiria splendens*
beavertail cactus - *Opuntia basilaris*
jojoba - *Simmondsia chinensis*
+ many annual flowers and grasses

upper terrace
robust mesquite bosques, some backwater river meanders, low intensity crop cultivation, minimal lower shelf crops in dry land irrigation reaches

low intensity agriculture associations
sisal - *Agave sisalana*
western honey mesquite - *Prosopis glandulosa var. torreyana*
screwbean mesquite - *Prosopis pubescens*
blue palo verde - *Cercidium floridum*
foothill palo verde - *Cercidium microphyllum*
wolfberry - *Lycium andersonii*
prickly pear - *Opuntia spp.*
jojoba - *Simmondsia chinensis*
fourwing saltbush - *Atriplex canescens*
quailbush - *Atriplex lentiformis*

characteristic native associations

mesquite bosques, atriplex and arrowweed scrub
fourwing saltbush - *Atriplex canescens*
quailbush - *Atriplex lentiformis*
desert broom - *Baccharis sarothroides*
blue palo verde - *Cercidium floridum*
wolfberry - *Lycium andersonii*
arrowweed - *Pluchea sericea*
western honey mesquite - *Prosopis glandulosa var. torreyana*
screwbean mesquite - *Prosopis pubescens*
inkweed - *Suaeda torreyana*

lower terrace
widening channels and meanders, sediment subduction and deposition, willow-cottonwood woodlands and wetland restoration, and minimal human development paralleling natural systems

cultivated crops
amaranth - *Amaranthus spp*
quinoa - *Chenopodium quinoa*
watermelon - *Citrullus lanatus*
melon - *Cucumis melo* - tsam'eetó
squash - *Cucurbita maxima, C. moschata* - ax mat
pumpkin - *Cucurbita pepo*, C. mixta - ax mát
gourds - *Lagenaria spp* - axnáły
maize - *Zea mays* - tathitis
jicama - *Pachyrhizus erosus*
bean - *Phaseolus spp* - mariik
peppers - *Piper spp*
Parish's pickleweed - *Salicornia subterminalis*

characteristic native associations

willow-cottonwood woodland
mule fat - *Baccharis salicifolia*
willow baccharis - *Baccharis salicina*
heliotrope - *Heliotropium curassavicum*
Fremont cottonwood - *Populus fremontii*
coyote willow - *Salix exigua*
Goodding's willow - *Salix gooddingii*

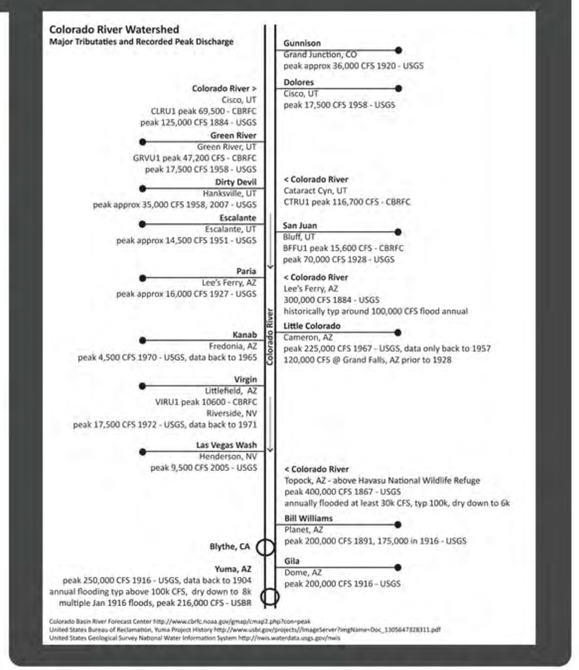
wetland
narrowleaf cattail - *Typha domingensis, T. latifolia*
hardstem bulrush - *Scirpus acutus*
+ some grasses and willow-cottonwood woodland spp

upper terrace
low intensity agriculture

mesquite bosques, atriplex and arrowweed scrub

desert scrub
human infrastructure thoughtful, conservation-oriented, dense, and out of floodplain interjecting expansive riparian connected desert

creosote, bursage, and alluvial scrub



Johnathan Perisho MLA 2013 + **Michael Plansky** MLA 2013 | **Winter 2012 | LA602 Natural Processes | Jessica Hall MLA Instructor | Department of Landscape Architecture | Cal Poly Pomona**