# Developing a cross-site system to improve access to vegetation synthetic databases: Veg-DB Workshop I

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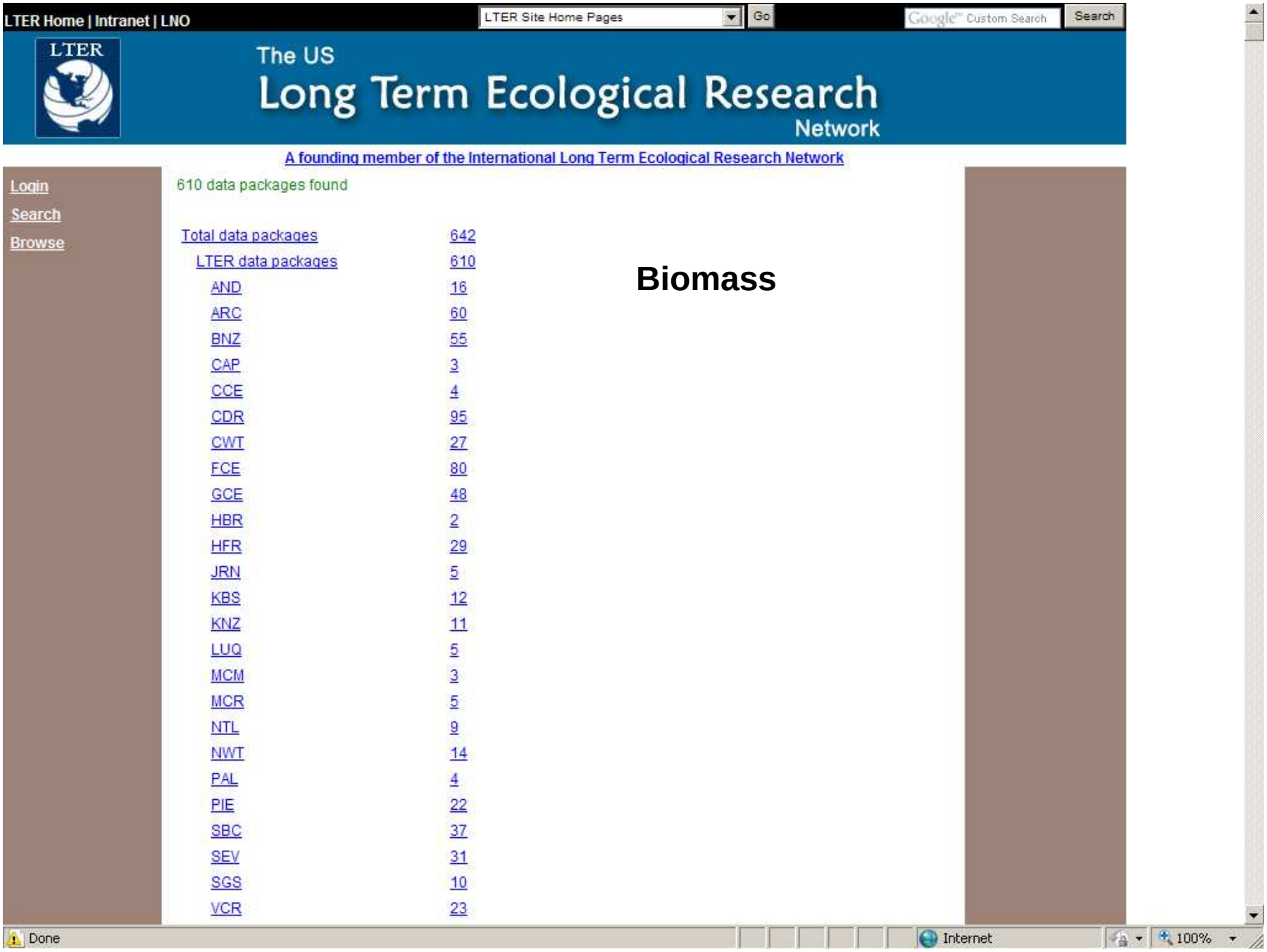
# Workshop Agenda

- Information Sharing
- Feedback and Discussion
- Information Gathering


LTER Home | Intranet | LNO
LTER Site Home Pages
Go
Google™ Custom Search
Search
LTER
The US
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Login
Search
Browse
610 data packages found
Total data packages 642
LTER data packages 610
AND 16
ARC 60
BNZ 55
CAP 3
CCE 4
CDR 95
CWT 27
FCE 80
GCE 48
HBR 2
HFR 29
JRN 5
KBS 12
KNZ 11
LUQ 5
MCM 3
MCR 5
NTL 9
NWT 14
PAL 4
PIE 22
SBC 37
SEV 31
SGS 10
VCR 23
Biomass
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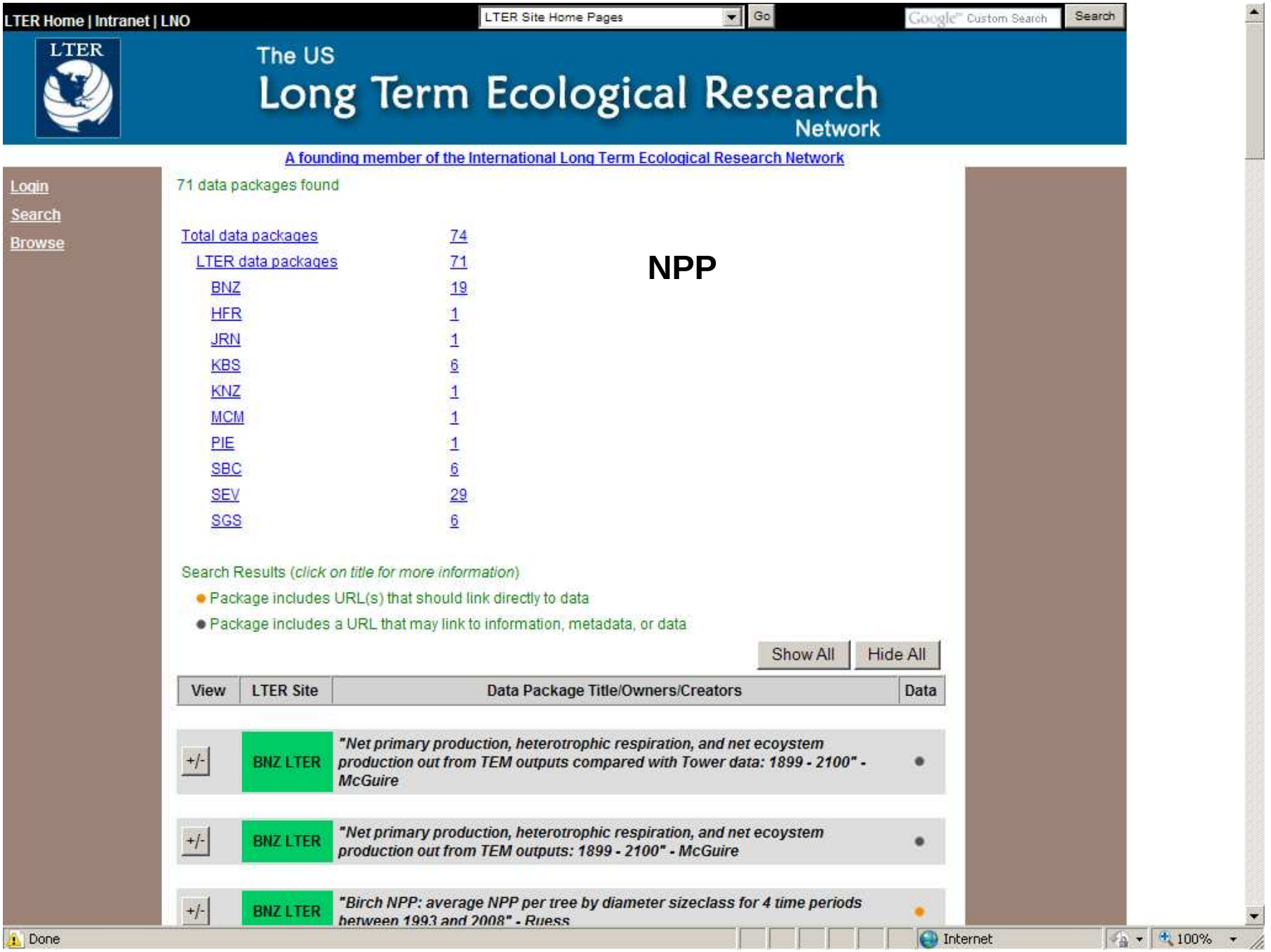
LTER Home | Intranet | LNO
LTER Site Home Pages
Go
Search
The US
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Login
Search
Browse
71 data packages found
Total data packages 74
LTER data packages 71
BNZ 19
HFR 1
JRN 1
KBS 6
KNZ 1
MCM 1
PIE 1
SBC 6
SEV 29
SGS 6
NPP
Search Results (click on title for more information)
Package includes URL(s) that should link directly to data
Package includes a URL that may link to information, metadata, or data
Show All
Hide All
View
LTER Site
Data Package Title/Owners/Creators
Data
+/-
BNZ LTER
"Net primary production, heterotrophic respiration, and net ecoystem production out from TEM outputs compared with Tower data: 1899 - 2100" - McGuire
+/-
BNZ LTER
"Net primary production, heterotrophic respiration, and net ecoystem production out from TEM outputs: 1899 - 2100" - McGuire
+/-
BNZ LTER
"Birch NPP: average NPP per tree by diameter sizeclass for 4 time periods between 1993 and 2008" - Ruess
Done
Internet
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LTER Site Home Pages | Go | Google™ Custom Search | Search

The US
# Long Term Ecological Research Network

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1654 data packages found

| | |
|---|---|
| Total data packages | 1692 |
| LTER data packages | 1654 |
| AND | 21 |
| ARC | 544 |
| BES | 67 |
| BNZ | 80 |
| CAP | 80 |
| CCE | 4 |
| CDR | 5 |
| CWT | 37 |
| FCE | 169 |
| GCE | 186 |
| HBR | 9 |
| HFR | 45 |
| JRN | 1 |
| KBS | 8 |
| KNZ | 5 |
| LUQ | 7 |
| MCM | 55 |
| MCR | 13 |
| NIN | 7 |
| NTL | 40 |
| NWT | 49 |
| PAL | 2 |
| PIE | 72 |
| SBC | 78 |
| SEV | 51 |

**Climate**

Water, water everywhere...
and not a drop to drink

page. | Internet

# Climate and Hydrology Database Projects (CLIMDB/HYDRODB)

## Climatological and Hydrological Data Access

Welcome to CLIMDB/HYDRODB, a centralized server to provide open access to long-term meteorological and streamflow records from a collection of research sites.

Please review the Data Access Policy before using the data.

- **Contributors**

| | View All | LTER | USFS | USGS |
|---|---|---|---|---|
| Sites | ◉ | ○ | ○ | ○ |
| Stations | ◉ | ○ | ○ | ○ |
| Variables | ◉ | ○ | ○ | ○ |

- **Data, Plots, and Downloads**
- **Metadata Reports**
  - Complete Site Report (PDF)
  - By Category Report (HTML)

- **General Description**
  - Site Contacts
    - LTER
    - USFS
    - Sites with USGS stations
  - Maps of Site Locations
    - LTER

# Veg-DB Objective

- Deliver reliable and consistent vegetation-related data to users via a single web-based portal
- Provide access to a value-added, secondary data product with standardized units as well as the ancillary information needed to interpret these data.

# Benefits-1

- Help sites process their data particularly when the value-added data being considered in Veg-DB is not currently a site's primary focus.

- The system would quickly inform investigators what data is being collected at which sites.

- It would help the LTER network share the long-term data it collects in a meaningful and useful manner to all investigators and students.

# Benefits-2

- It would enhance the LTER network capacity to lead ecological synthesis efforts, an achievement that NSF and broader scientific community is expecting.

- It could help address research problems that currently viewed as data limited

- Assist simulation modeling efforts

# Example Topics

- *Individual plant growth rates versus size/age of plant.*
- *Temporal trends in mortality related to climate variability and change.*
- *Temporal trends in NPP related to climate variability and change.*
- *Successional patterns of biomass accumulation and NPP.*
- *The relationship between diversity (richness, evenness, etc) and NPP.*
- *Correlation of temperature, precipitation, and other abiotic factors with broad-scale patterns of NPP and biomass.*

# Types of data in the system

- **Raw or primary** data (counts, cover, individual size, harvest)
- **Supplemental** data (plot area, slope corrections, biomass equations, conversion factors)
- **Ancillary** data (where, what, when, etc)
- **Output or secondary** data (derived from raw and supplelmental data)

# Output Data

- At the **ecosystem level**: 1) Live biomass and carbon stores, 2) NPP, 3) Net change in live biomass, 4) mortality and litterfall, 5) ingrowth/birth of new biomass, and 6) herbivory.

- At the **community level**: 1) Presence/absence of species, 2) dominance expressed as cover, basal area, density, volume, biomass, and carbon, and 3) diversity expressed as richness and evenness.

- At the **population level**: 1) density of individuals, 2) recruitment into minimum size class measured, and 3) mortality of individuals.

# Data Resolution

- Temporal –annual values, multiple dates
- Spatial-individual, subplots, plots, logical aggregation level (stand, watershed, marsh, tract)
- Taxonomic-species, life-form, total
- Size-minimum whatever sites supply, no size classes
- Age-only at plot level

Figure 1: VegDB – simple example for Plum Island (PIE)

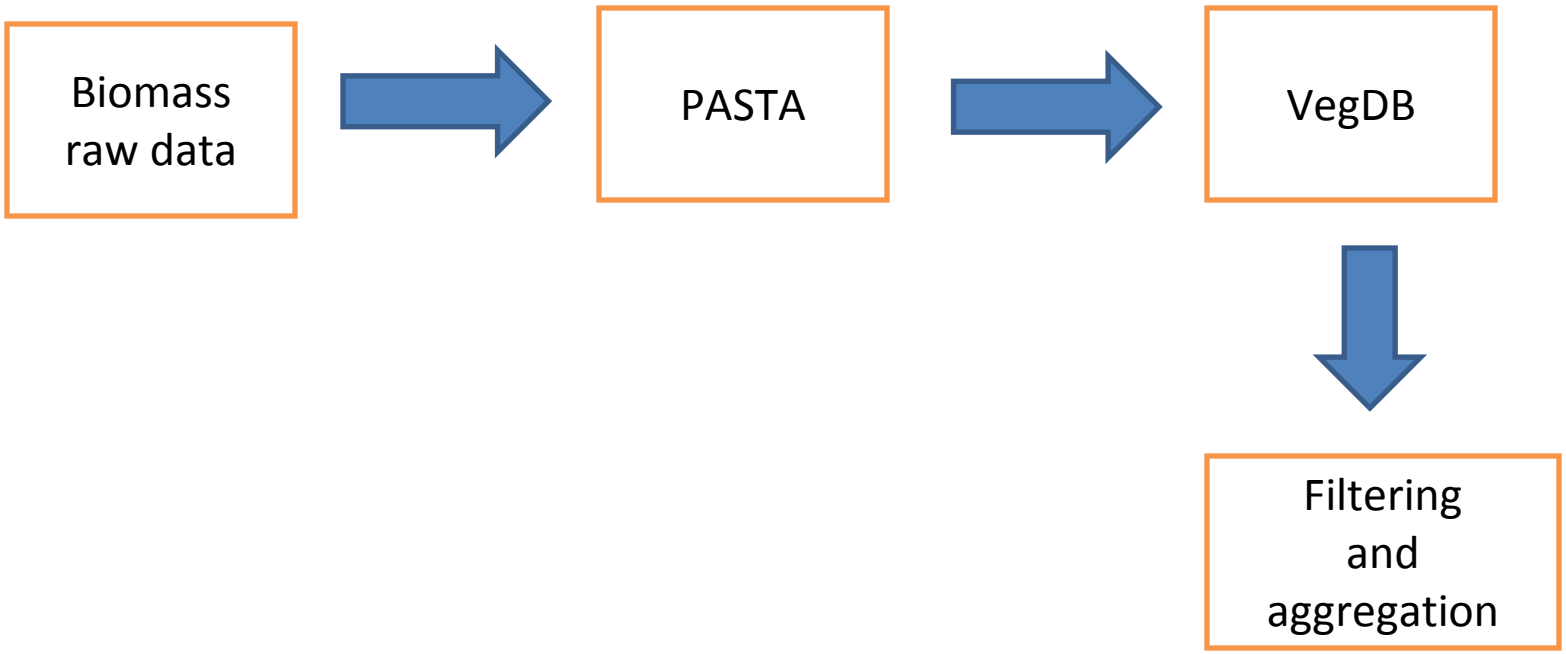
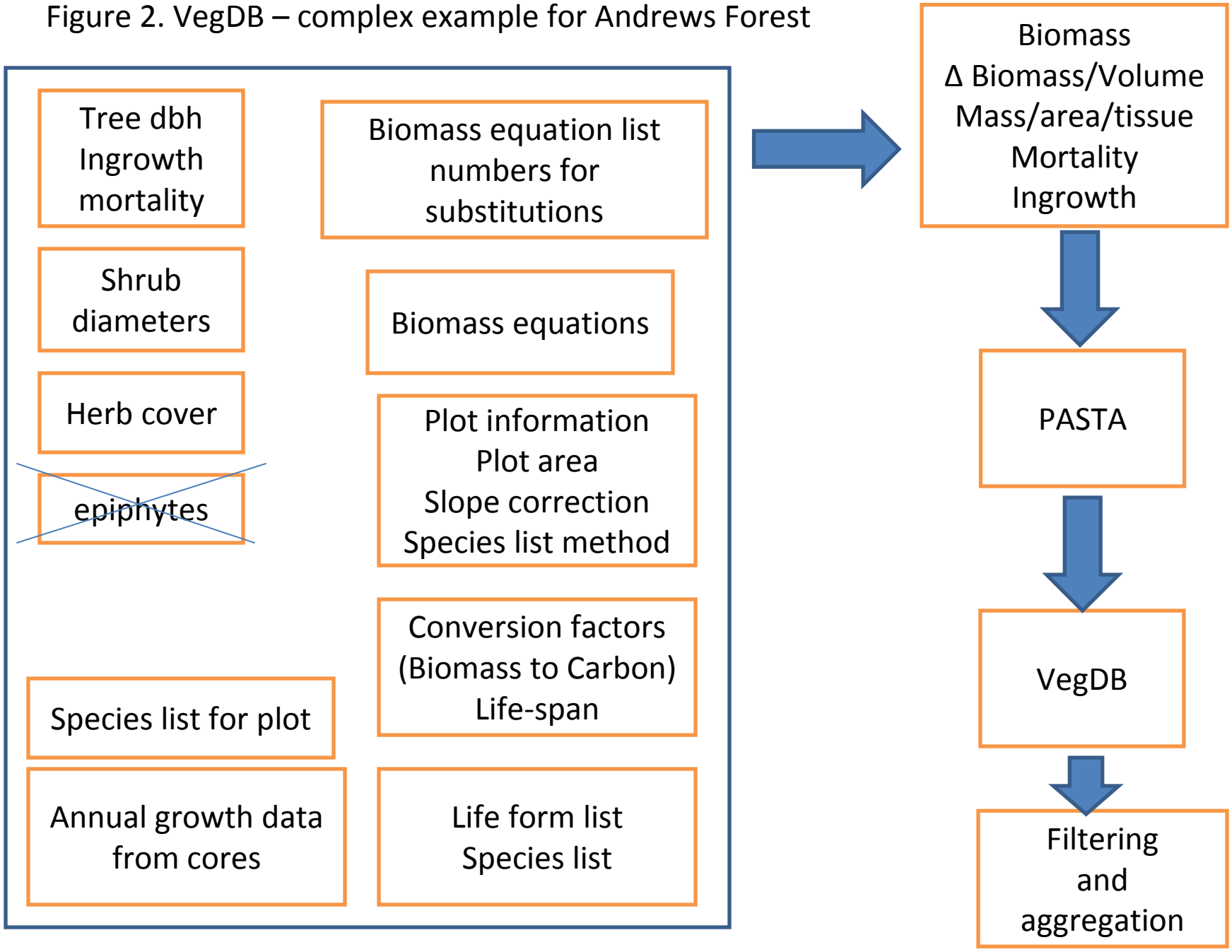
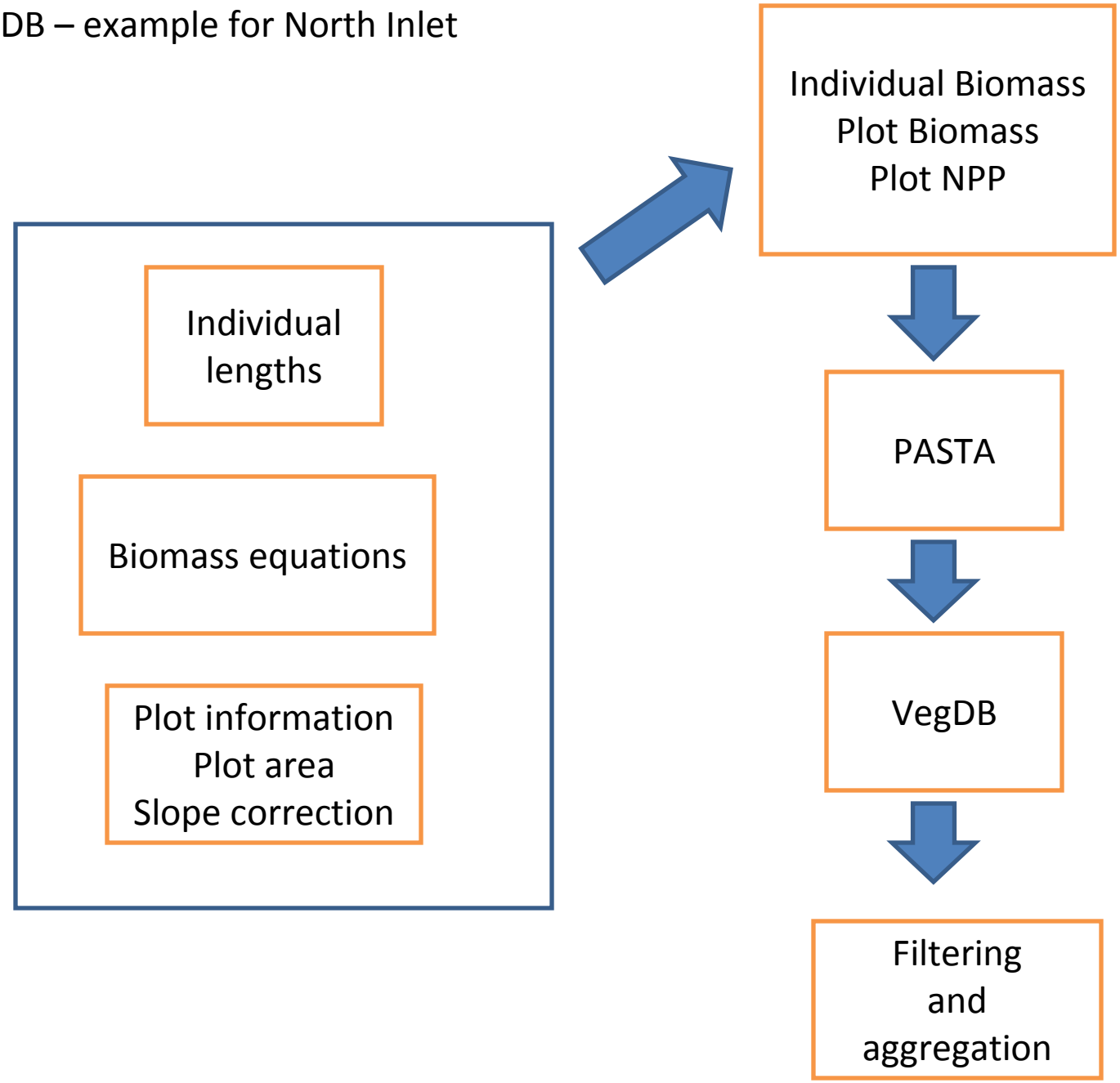


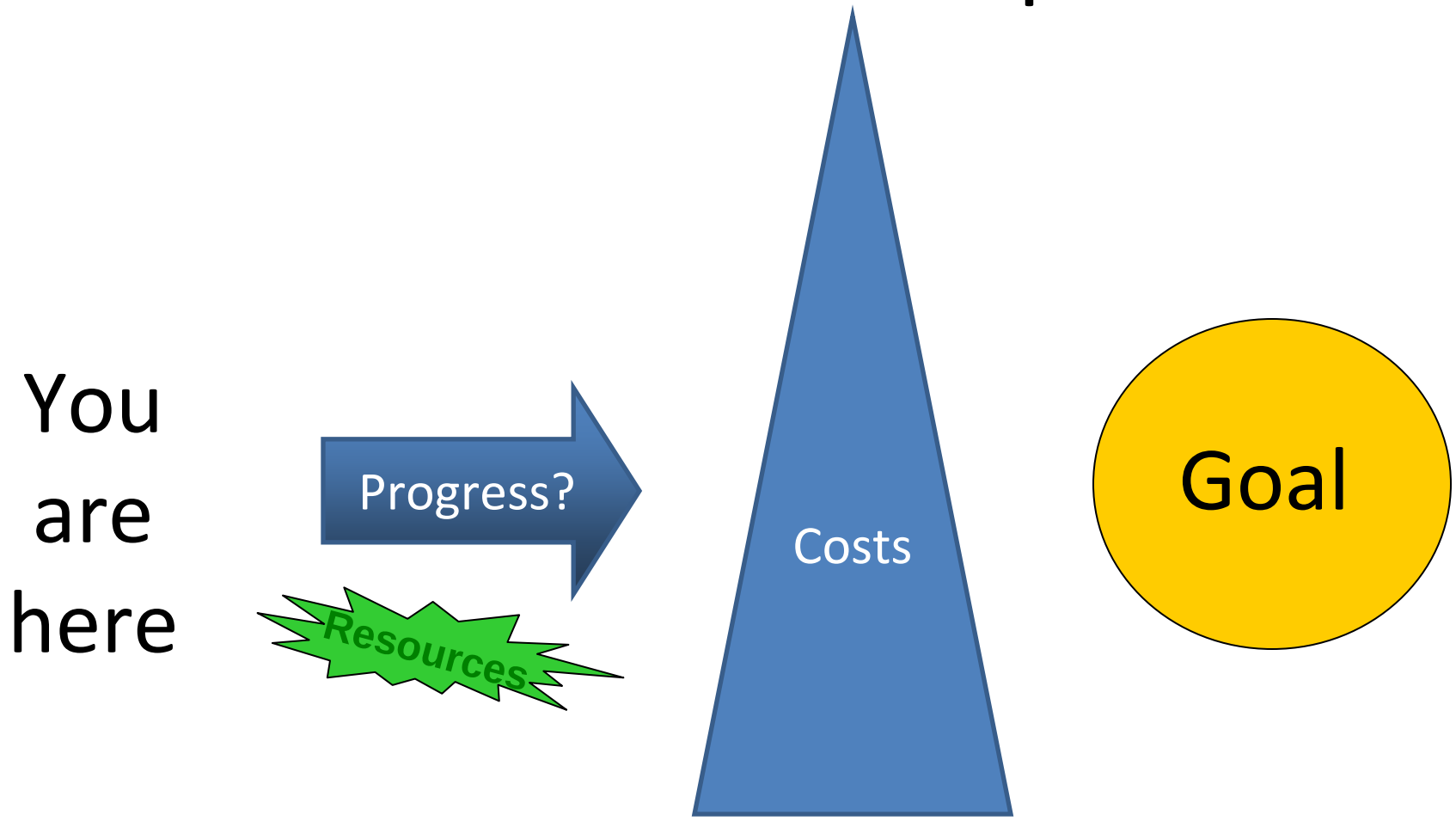
Figure 2. VegDB – complex example for Andrews Forest



VegDB – example for North Inlet



# Limitations to development



# Limitations to development

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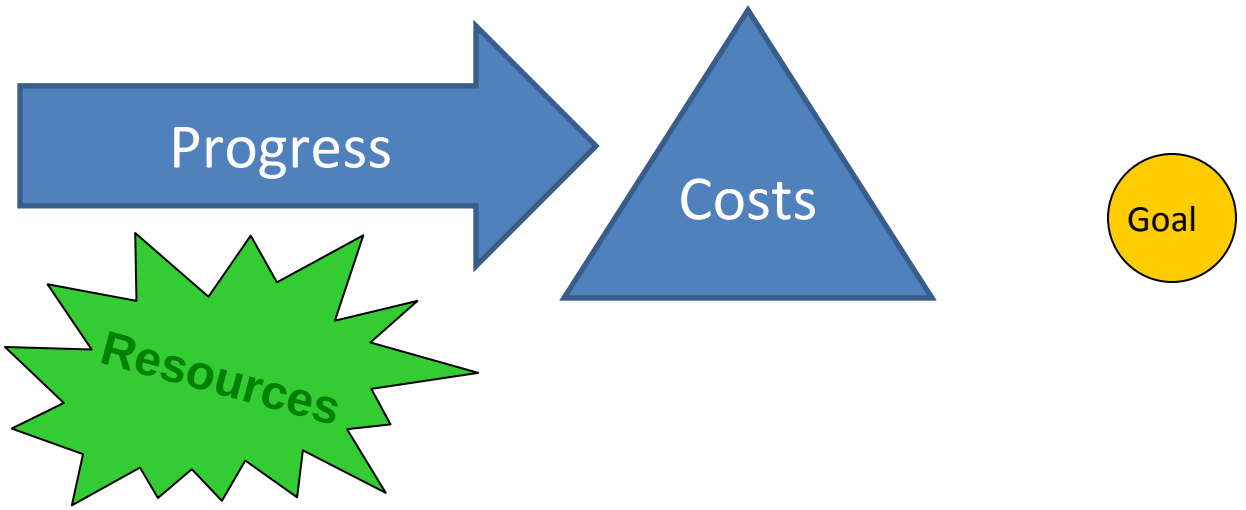

# Limitations to development

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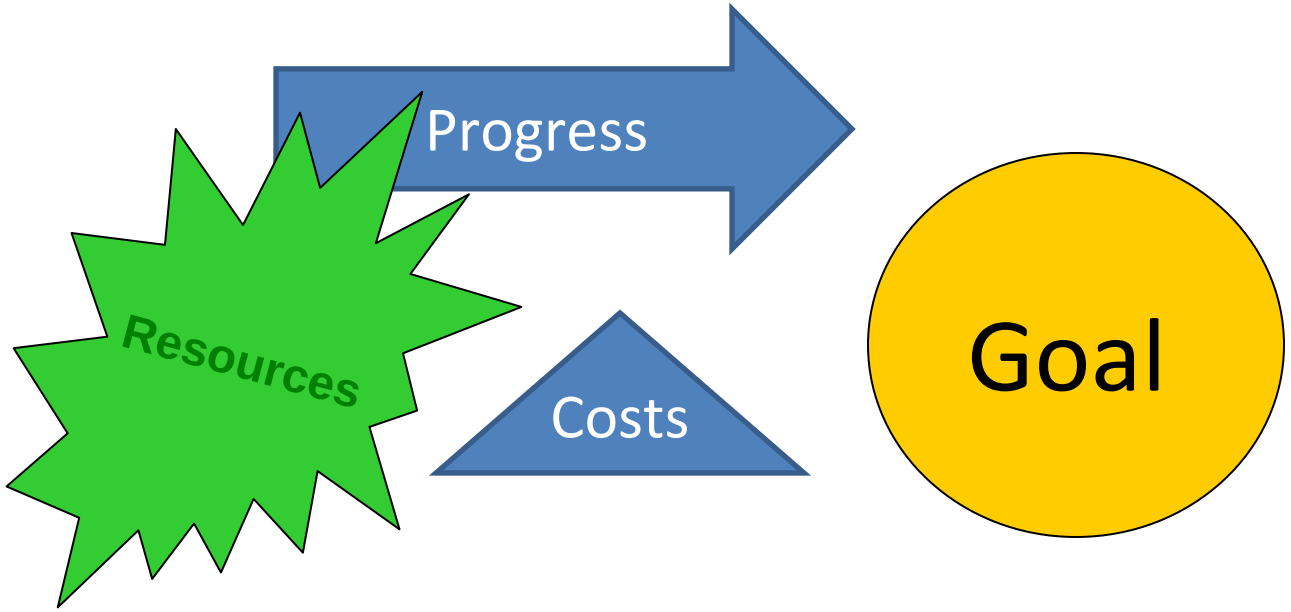
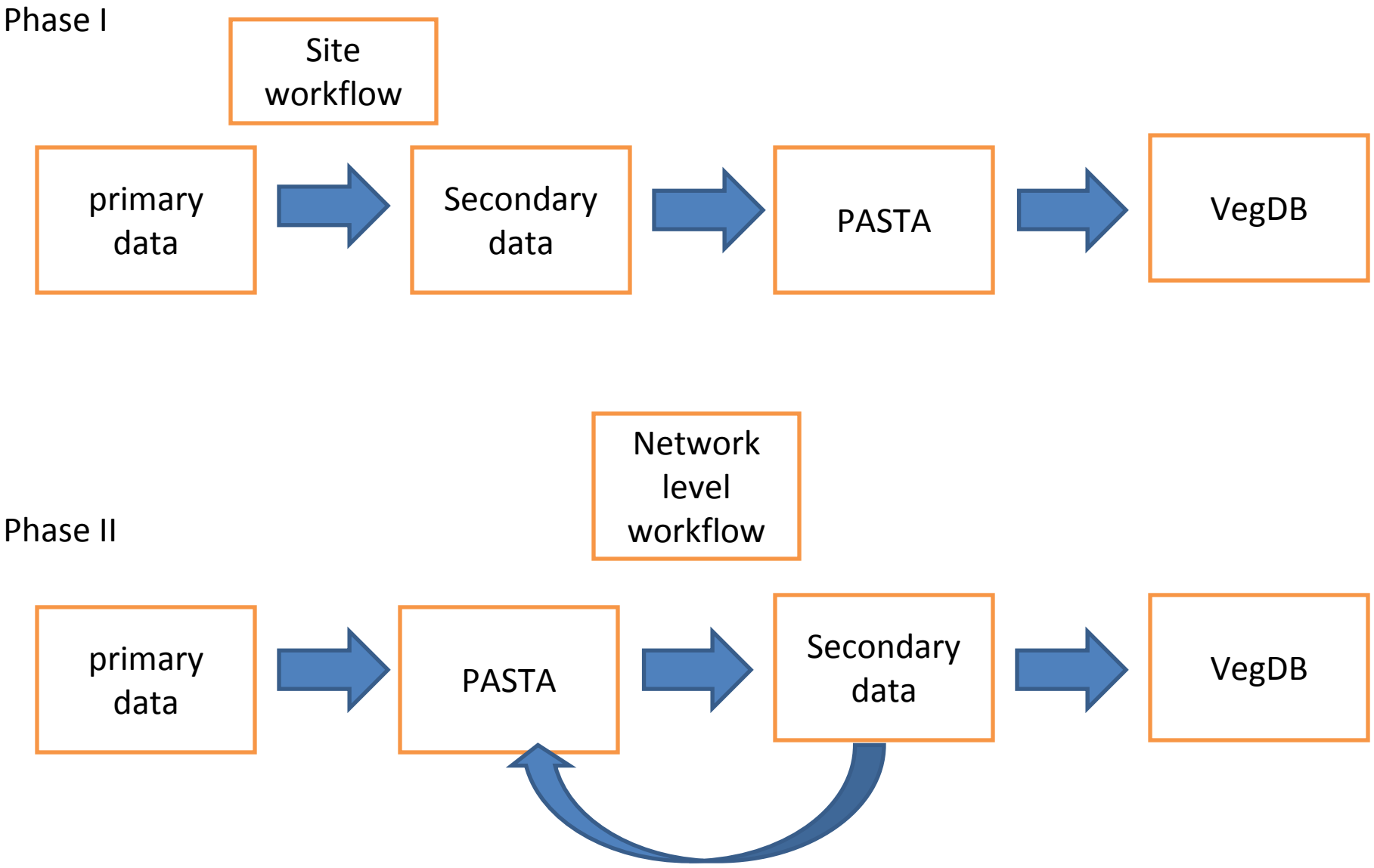


# Resources

- Site level infrastructure
- Interface design and testing
- Network infrastructure and maintenance

- Science question(s) to drive effort

Figure 3. Possible VegDB configurations.



# Coordinating with Other Efforts

- Site level infrastructure
- Veg-X exchange standards
- Clim-Hydro-DB
- Site-DB
- PASTA

# Next Steps

- Inform the LTER network of plans for Veg-DB.
- Conduct a LTER community survey
  - vegetation data, processing infrastructure, degree of interest, and potential uses
- Design a user interface mock-up to show the kinds of possible queries.
- Determine the optimal integration method(s) with PASTA.
- Select the prototype sites
- Secure funding and resources for Phase I of the system.

Thanks!