

Database and data tables

Responsibilities:

Tamara Yankovich (SRC) – Freshwater

Justin Brown (NRPA) – Marine

CEH – Terrestrial

David Copplestone (EA) - On-line database

Database - recap

- Started with ERICA databases for generic freshwater, marine and terrestrial ecosystems:
 - QC'ed, re-categorised to 'IAEA' organism and wildlife groupings and also by ICRP RAP
 - QC resulted in some reductions in data for marine and identified that considerable number of freshwater values originated from review publications
 - On-line database (<http://www.wildlifetransferdatabase.org/>) and excel entry form used for additional data entries

Additional datasets entered

- Japanese estuarine data (NIRS)
 - Crustaceans, macroalgae & molluscs collected in estuaries
 - Approx. 2000 entries; >30 elements
- Helcom Mors Baltic Sea data (STUK)
 - Approx 250 entries
 - Largely Sr & Cs
 - Crustacean, fish, mollusc, phytoplankton

- CANDU Operators Group monitoring data (COG)
 - Approx 4000 data entries largely freshwater organisms
 - >30 elements
- Canadian mining industry monitoring data (CNSC)
 - Freshwater organisms
 - >20000 entries
 - biota:sediment CRs as well as biota:water

- Russian language literature (RIARAE)
 - Freshwater
 - Marine
 - Terrestrial plants
- Natural radionuclides – grasses (SCK·CEN)
- Australian terrestrial data (ANSTO)
 - Natural RNs, actinides, Cs-137
 - Includes marsupial, reptile, witchetty grub

- Freshwater database (Yankovich)
- Reptile review paper data (Liverpool)
- Bird/bat/rodent Sr,Cs,Pu data Chernobyl (CEH/IRL)
- Sand dune studies (Liverpool)
- Post FASSET/ERICA lit. review (CEH)
- Oregon Forest data (Oregon Uni.)
..... more (KAERI, WSC, SENES)
giving c. 60,000 data entries

Discussion of entered data

- What we did to it
- What's changed?
- Tables currently presented at broad wildlife group level (e.g. fish, mammal)
- Remaining QC issues
- Changes to wildlife groups?
- Are we going to accept more data before final draft?

Data treatment

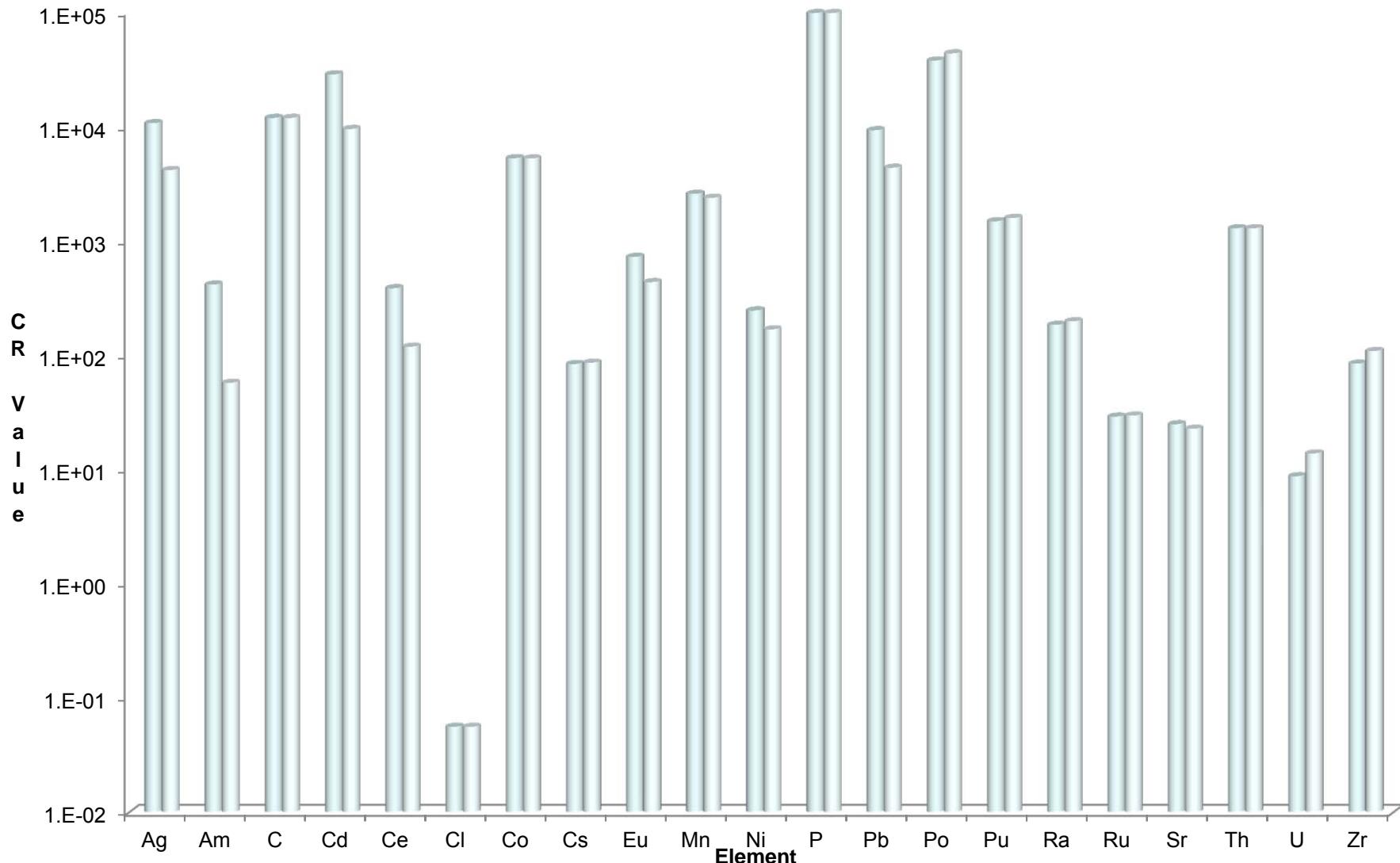
- Yankovich et al. used to convert tissue to wholebody data (for new entries)
- QC
 - Exclude if unclear if DW or FW, tissue or wholebody, co-location of biota and water ...
 - Duplicate data

What's changed ?

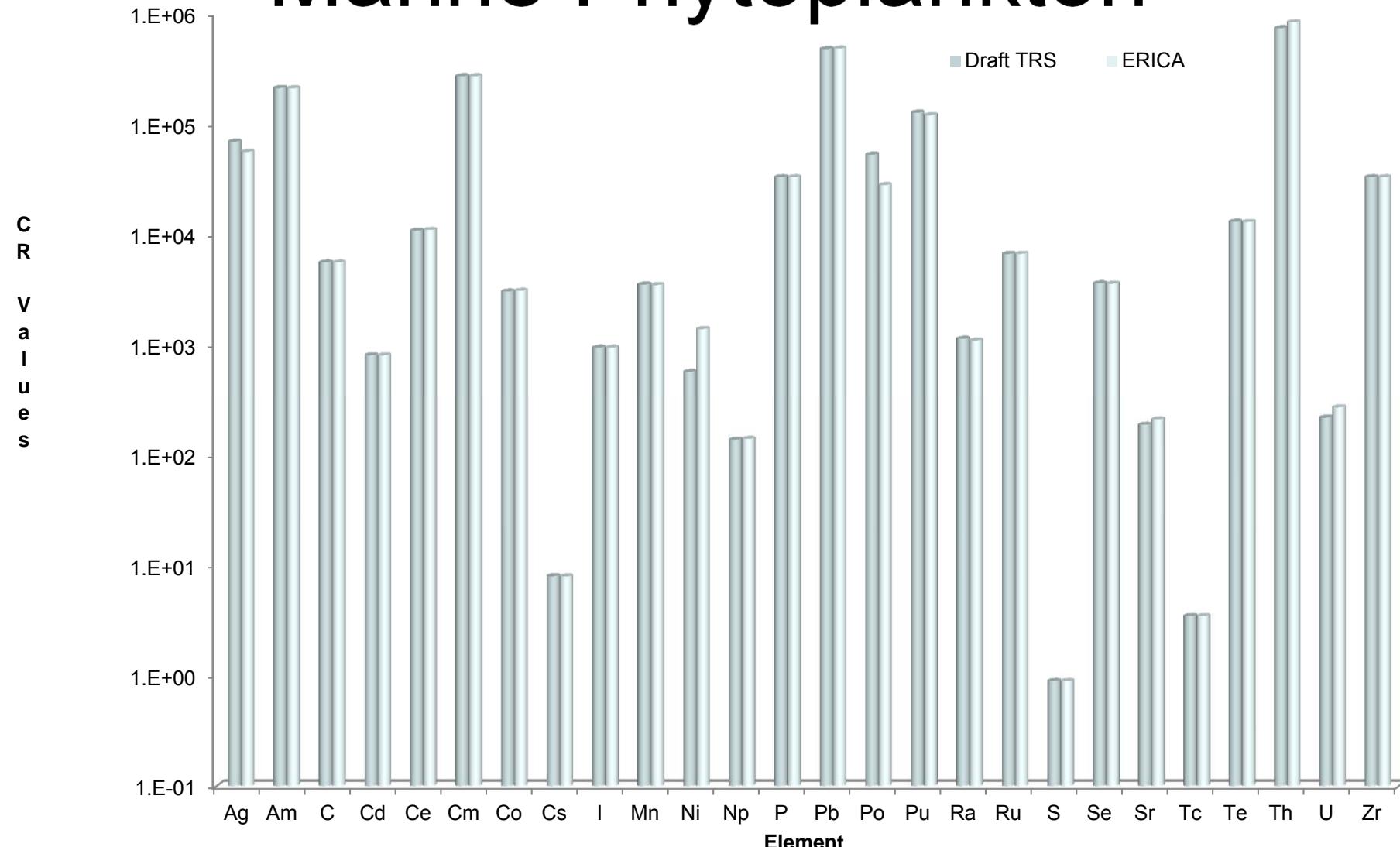
Marine fish

Draft TRS

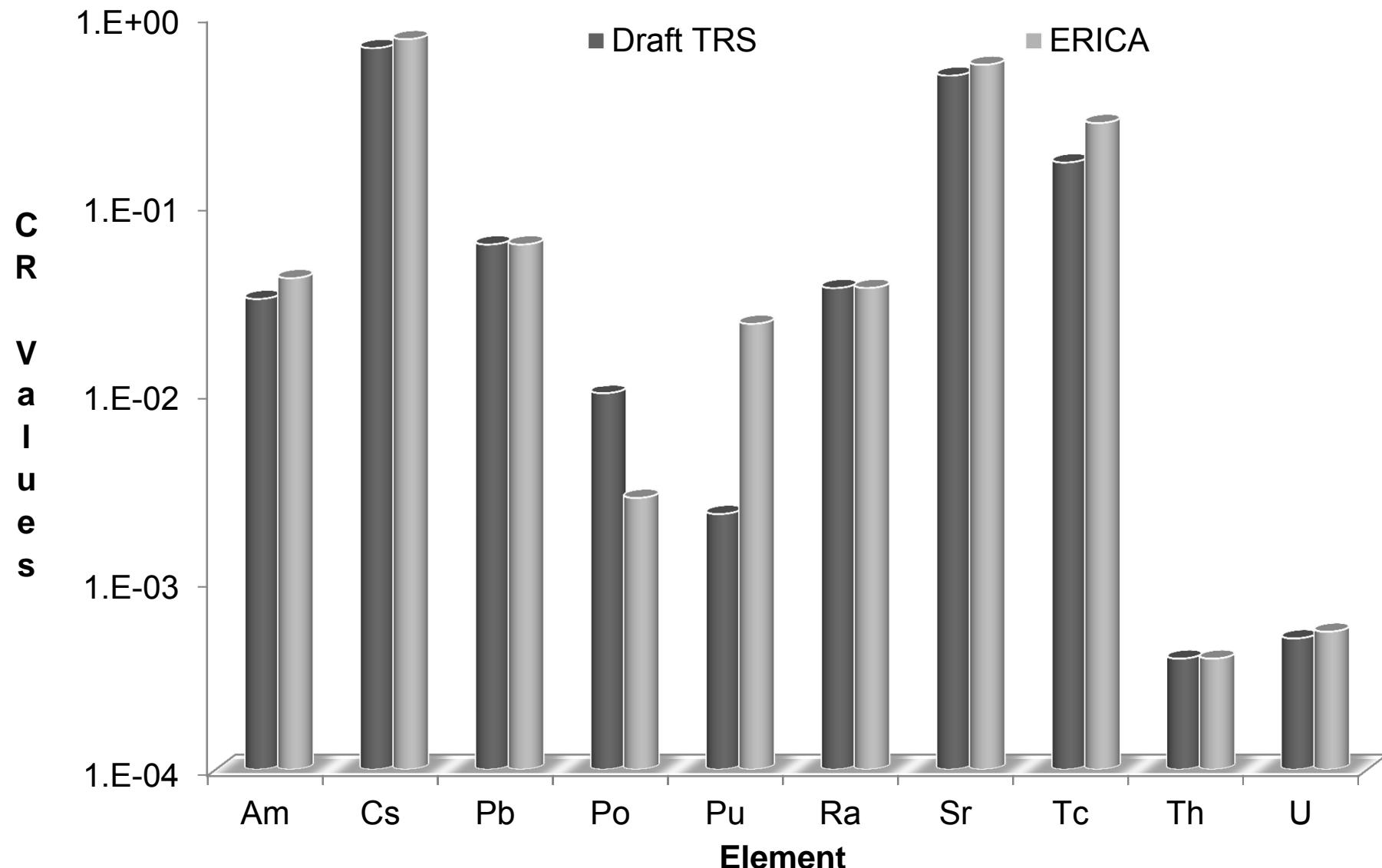
ERICA

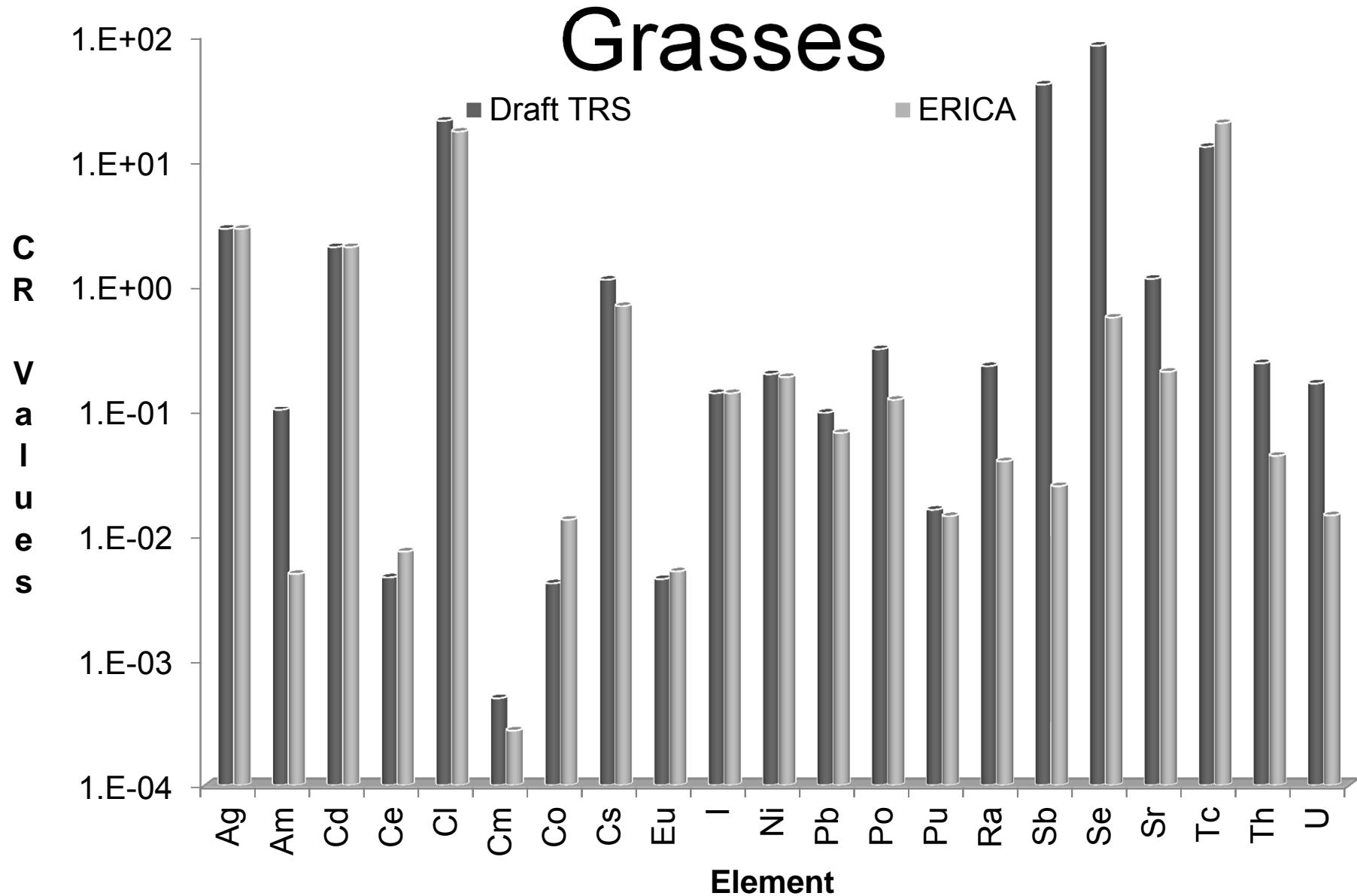


Marine Phytoplankton

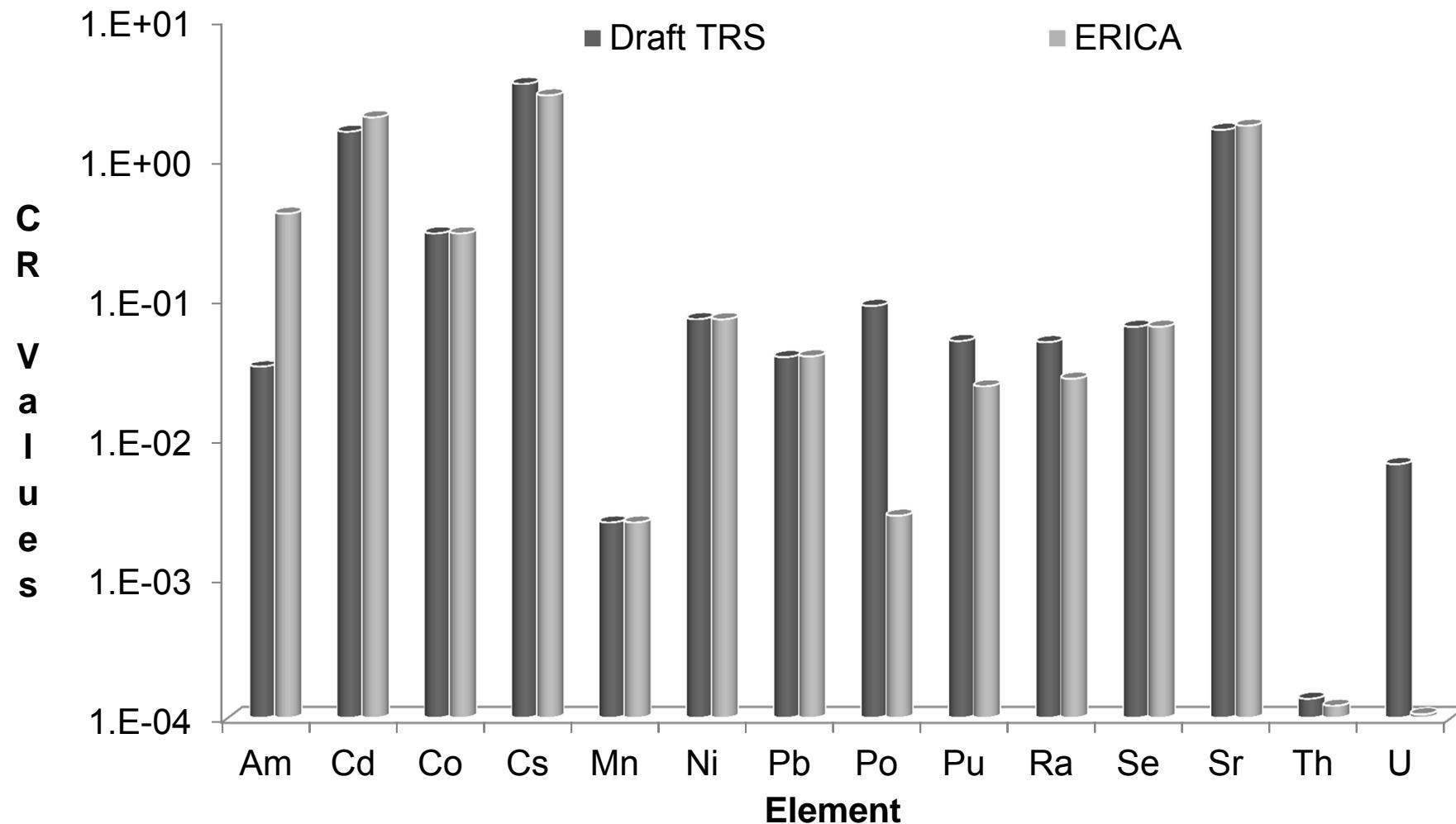


Terrestrial Birds

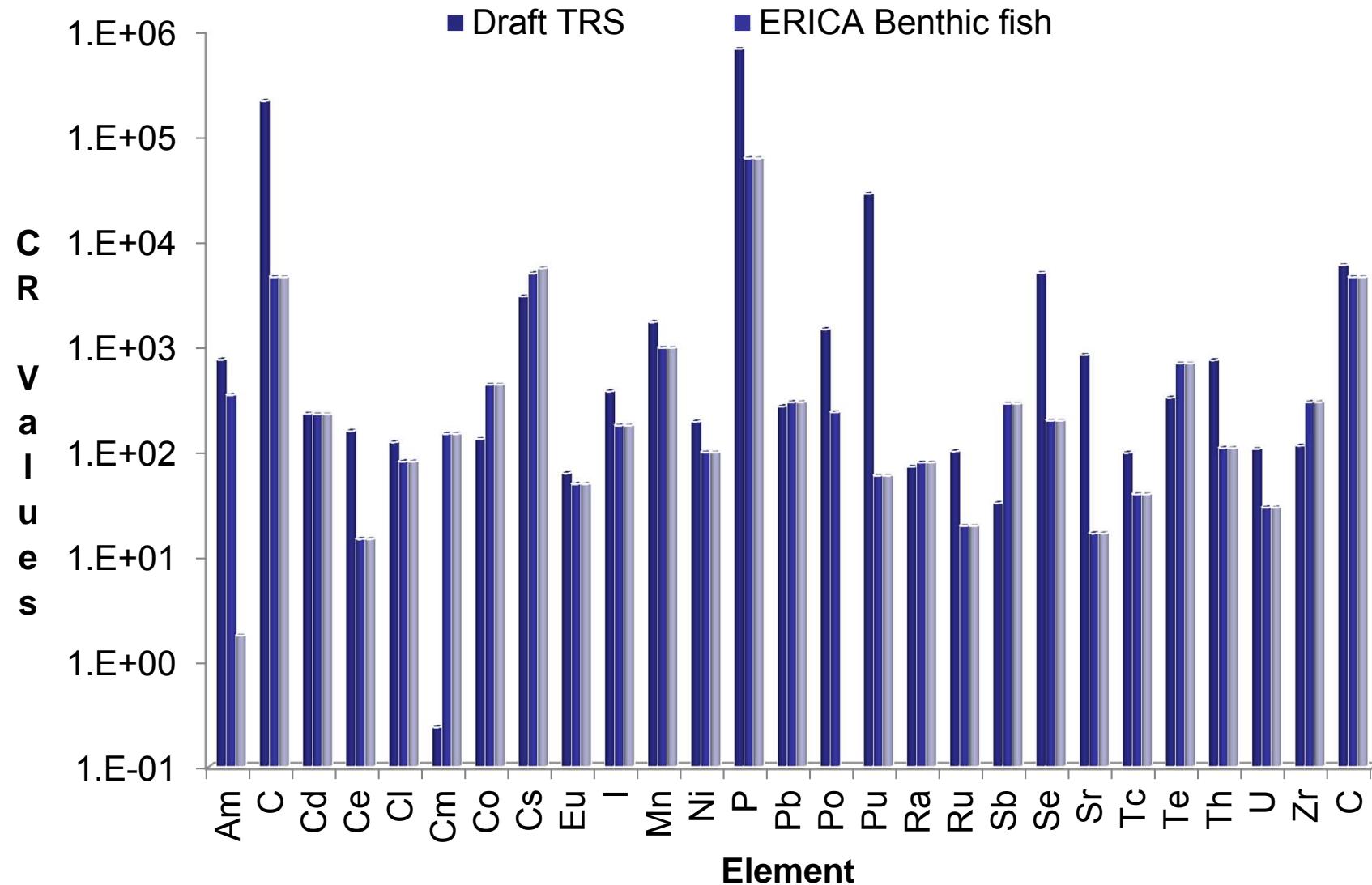




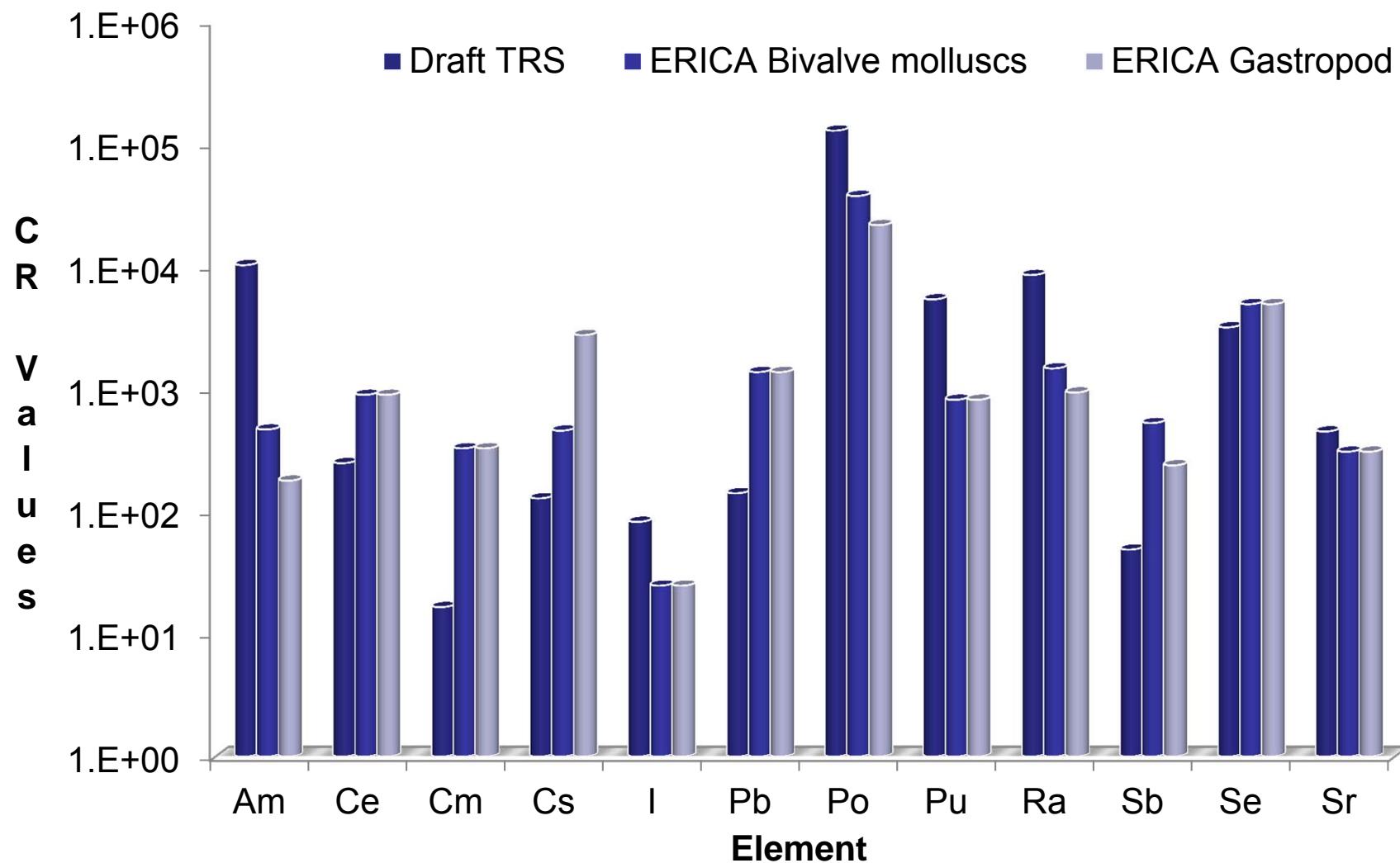
Terrestrial Mammals



Freshwater fish



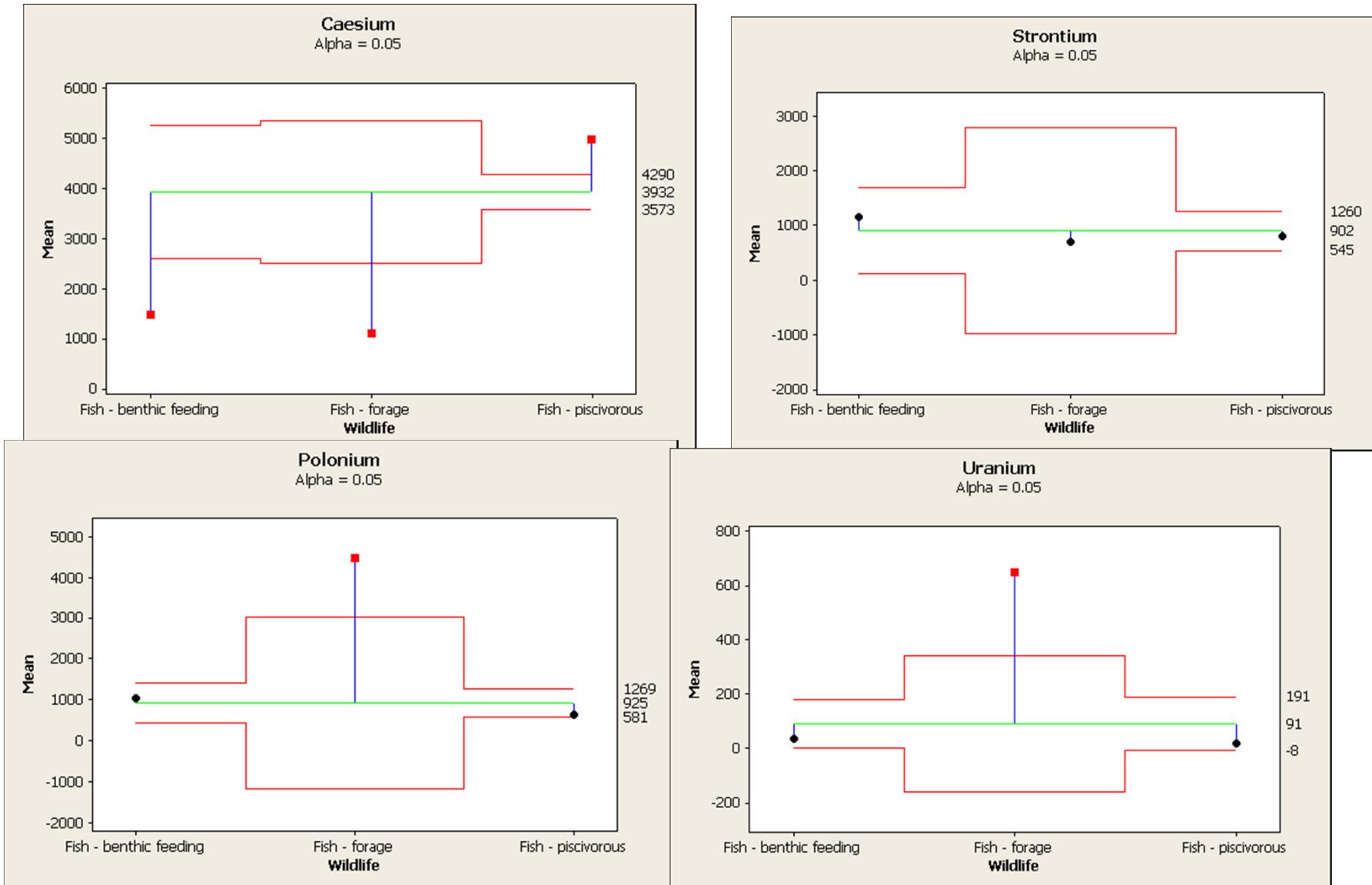
Freshwater - mollusc



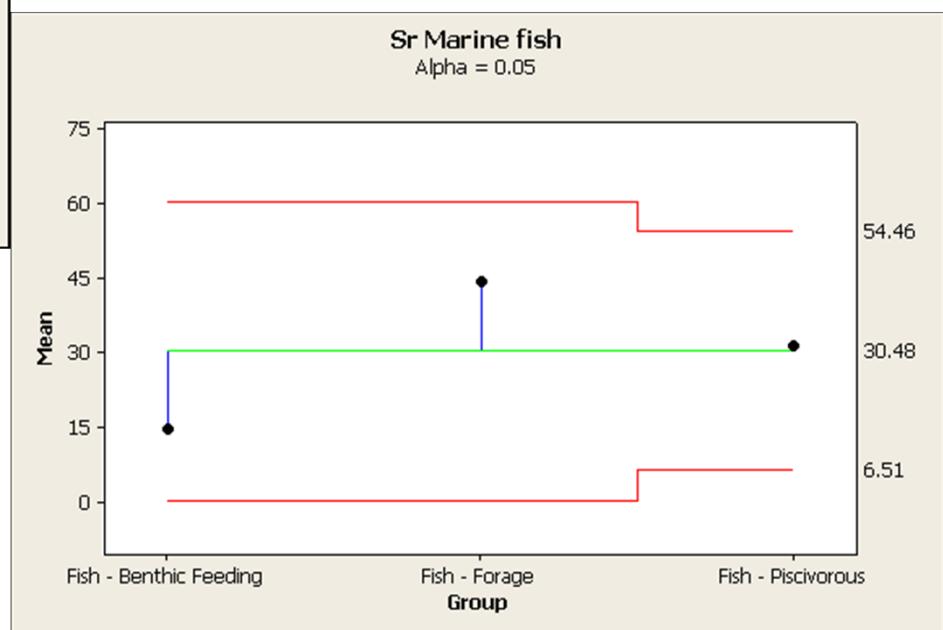
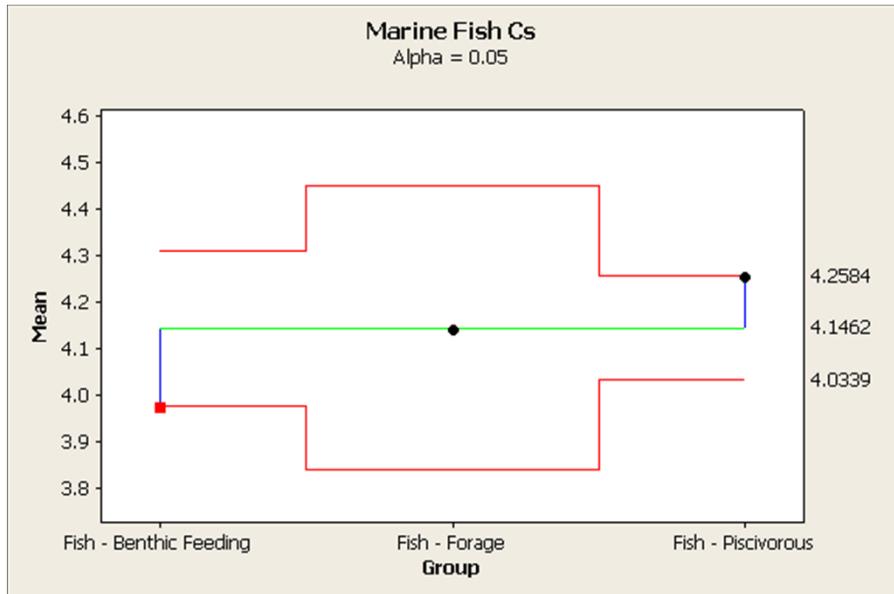
Wildlife group?

- Currently at broad wildlife group
- Can we justify going to subcategory?

Freshwater fish



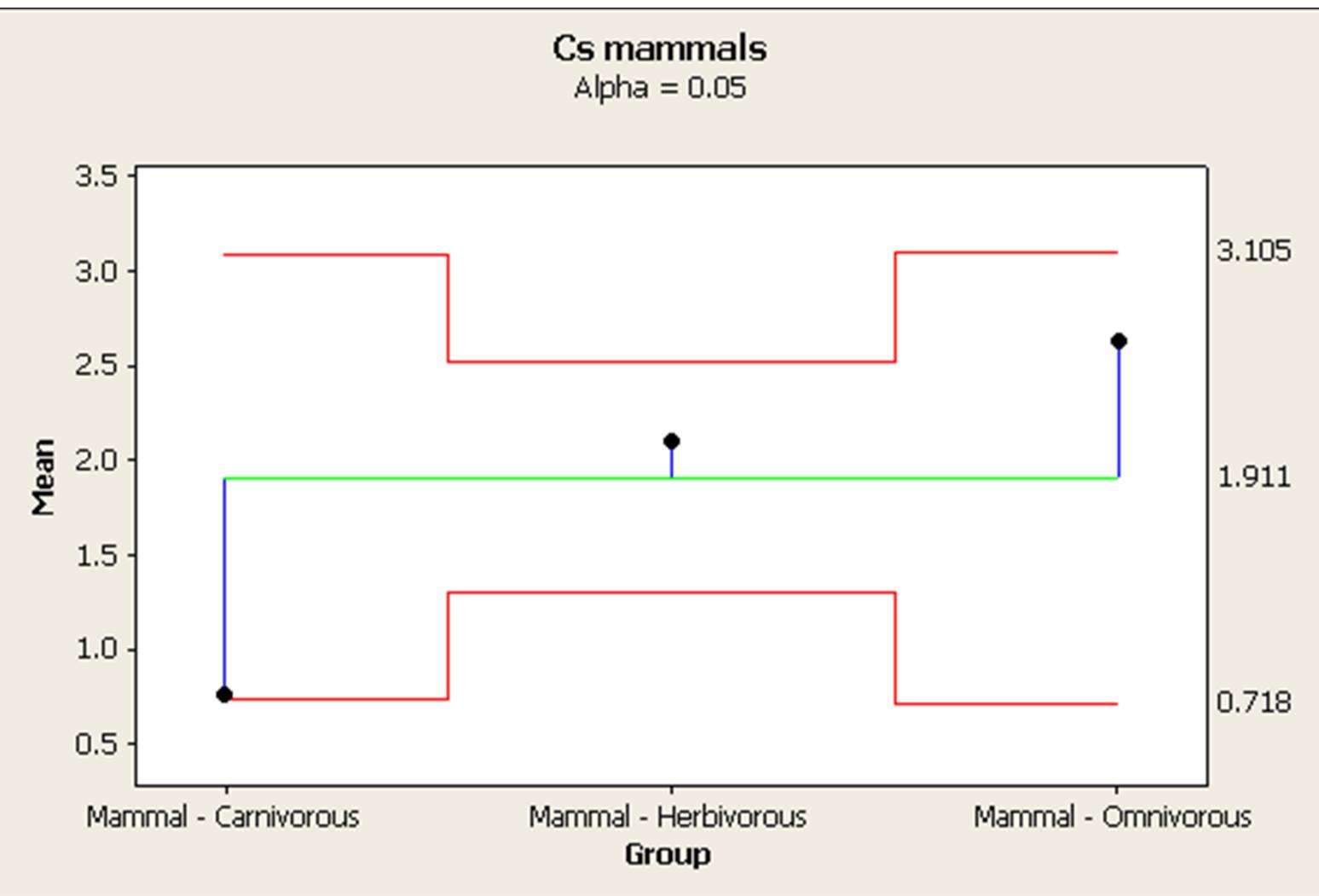
Marine fish



Wildlife subgroups

- Statistical justification for separating some
- Others have large amounts of data e.g. grasses v's herbs, coniferous tree v's broadleaf tree ... so why combine?

Terrestrial mammals



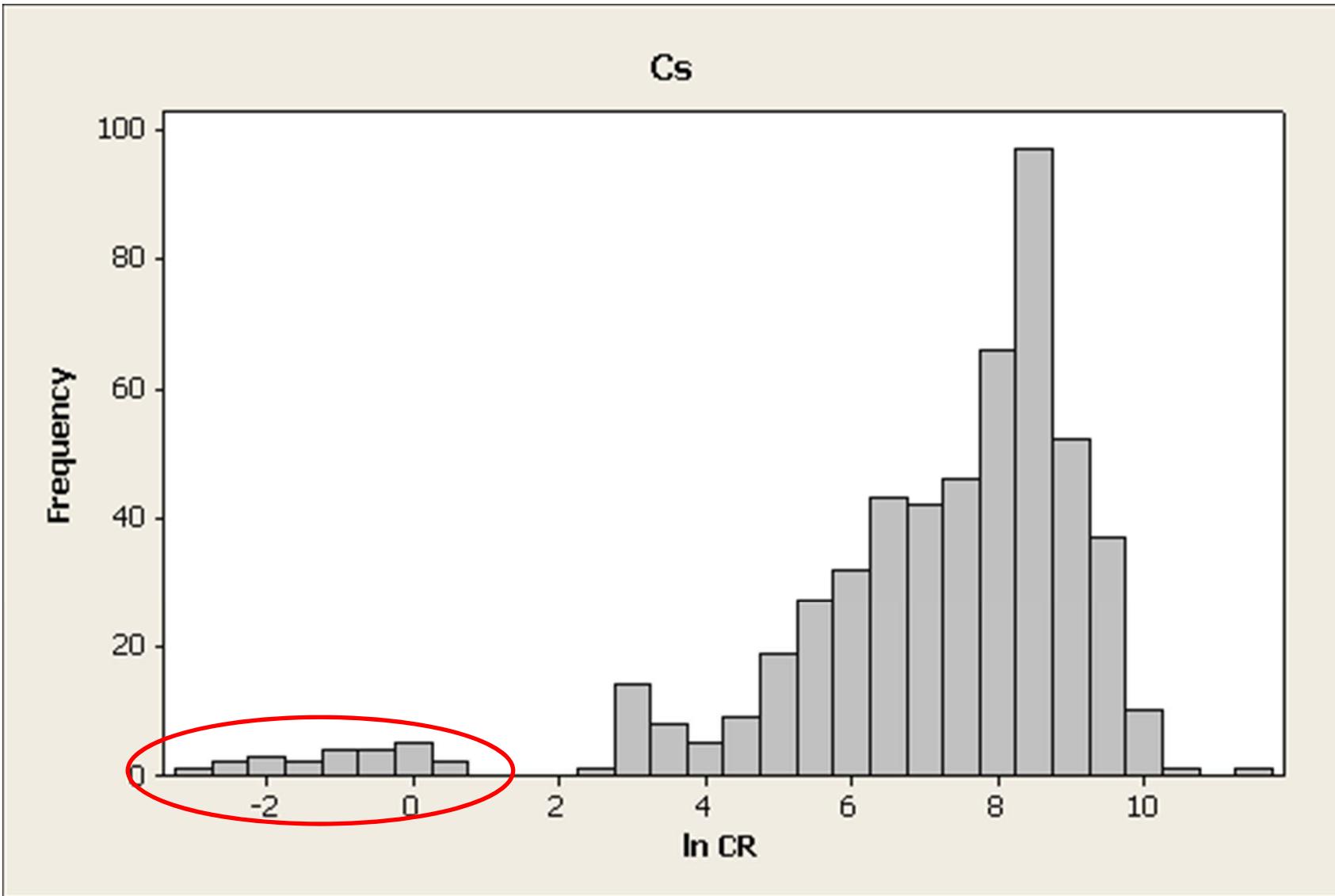
Wildlife subgroups

- Statistical justification for separating some
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- unless we don't like the answer!

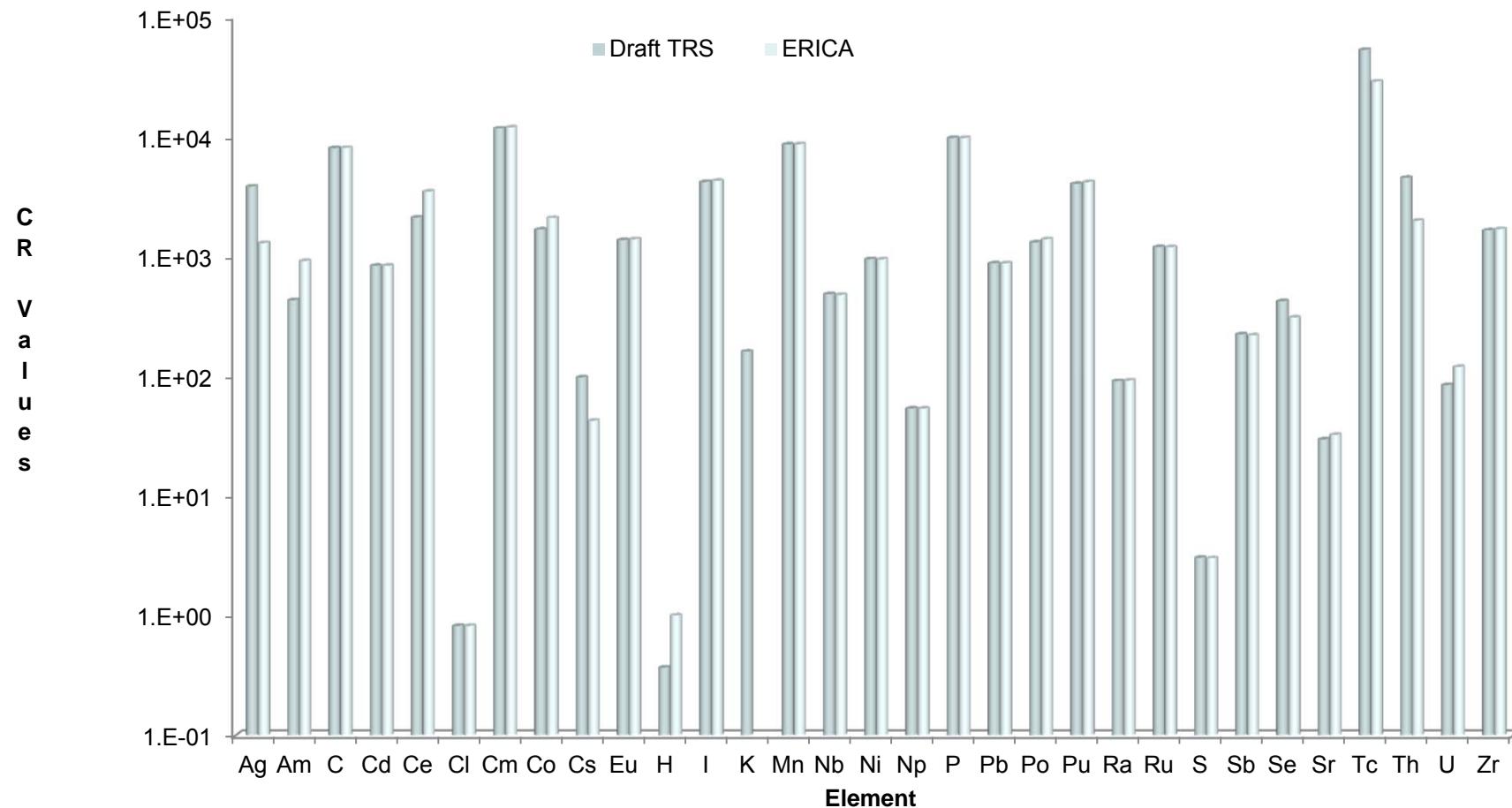
QC issues

- Summarisation of data/BMG scenarios etc. have id'ed issues with data base

Cs Fish



Marine Phytoplankton



Freshwater fish categories (wiki).xls [Compatibility Mode] - Microsoft Excel

A1 Version 14 (28/07/2010)

1 Version 14 (28/07/2010)

2 Fish species with IAEA database sub-category and ICRP RAP designation

3 This list will be extend as additional species are added to the database (try <http://www.fishbase.org/Summary> if you need information on a species not listed)

| | Species Latin | Alternative Name | Species Common | Category | ICRP RA |
|----|--|---------------------|---|------------------------|----------|
| 4 | <i>Abramis bjoerkna</i> | <i>Blicca</i> spp. | Silver Bream | Fish - benthic feeding | None |
| 5 | <i>Abramis brama</i> | | Bream or Carp Bream | Fish - benthic feeding | None |
| 6 | <i>Albumus albumus</i> | | Common bleak | Fish - benthic feeding | None |
| 7 | <i>Alosa pseudoharengus</i> | | Alewife | Fish - forage | None |
| 8 | <i>Ambloplites rupestris</i> | | Rockbass | Fish - piscivorous | None |
| 9 | <i>Ameiurus nebulosus</i> | | Brown bullhead | Fish - benthic feeding | None |
| 10 | <i>Amia calva</i> | | Bowfin | Fish - piscivorous | None |
| 11 | <i>Anguilla anguilla L.</i> | | Eel or European eel | Fish - benthic feeding | None |
| 12 | <i>Anguilla rostrata</i> | | American eel | Fish - piscivorous | None |
| 13 | <i>Aplodinotus grunniens</i> | | Freshwater drum | Fish - benthic feeding | None |
| 14 | <i>Aspius aspius</i> | <i>Aspius rapax</i> | Asp | Fish - piscivorous | None |
| 15 | <i>Carassius auratus</i> | | Goldfish | Fish - forage | None |
| 16 | <i>Carassius auratus gibelio</i> Bloch | | Prussian carp or Silver Prussian carp or Gibel carp | Fish - forage | None |
| 17 | <i>Carassius carassius</i> | | Crucian carp | Fish - benthic feeding | None |
| 18 | <i>Carpoides carpio</i> | | Carp sucker | Fish - benthic feeding | None |
| 19 | <i>Catostomus catostomus</i> | | Longnose sucker | Fish - benthic feeding | None |
| 20 | <i>Catostomus commersonii</i> | | White sucker | Fish - benthic feeding | None |
| 21 | <i>Catostomus sp.</i> | | Sucker | Fish - benthic feeding | None |
| 22 | <i>Channa punctatus</i> | | Taki or Spotted snakehead | Fish - piscivorous | None |
| 23 | <i>Cirrhinus cirrhosa</i> | | White carp | Fish - forage | None |
| 24 | <i>Cirrhinus reba</i> | | Tatkeni | Fish - forage | None |
| 25 | <i>Coregonus albula</i> | | Vendace | Fish - benthic feeding | Salmonid |
| 26 | <i>Coregonus clupeaformis</i> | | Lake whitefish | Fish - benthic feeding | Salmonid |
| 27 | <i>Coregonus hoyi</i> | | Bloater | Fish - forage | Salmonid |
| 28 | <i>Coregonus lavaretus</i> | | European whitefish | Fish - benthic feeding | Salmonid |
| 29 | <i>Coregonus peled</i> | | Northern whitefish | Fish - benthic feeding | Salmonid |
| 30 | <i>Coregonus spp.</i> | | Whitefish | Fish - benthic feeding | Salmonid |
| 31 | <i>Cottus cognatus</i> | | Slimy sculpin | Fish - benthic feeding | None |
| 32 | <i>Cottus</i> spp. | | | Fish - benthic feeding | None |

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workingfile phylogeny wiki Useful Weblink

Start C:\Documents and Settin... Microsoft Excel - Fres... Microsoft PowerPoint - [...]

07:38

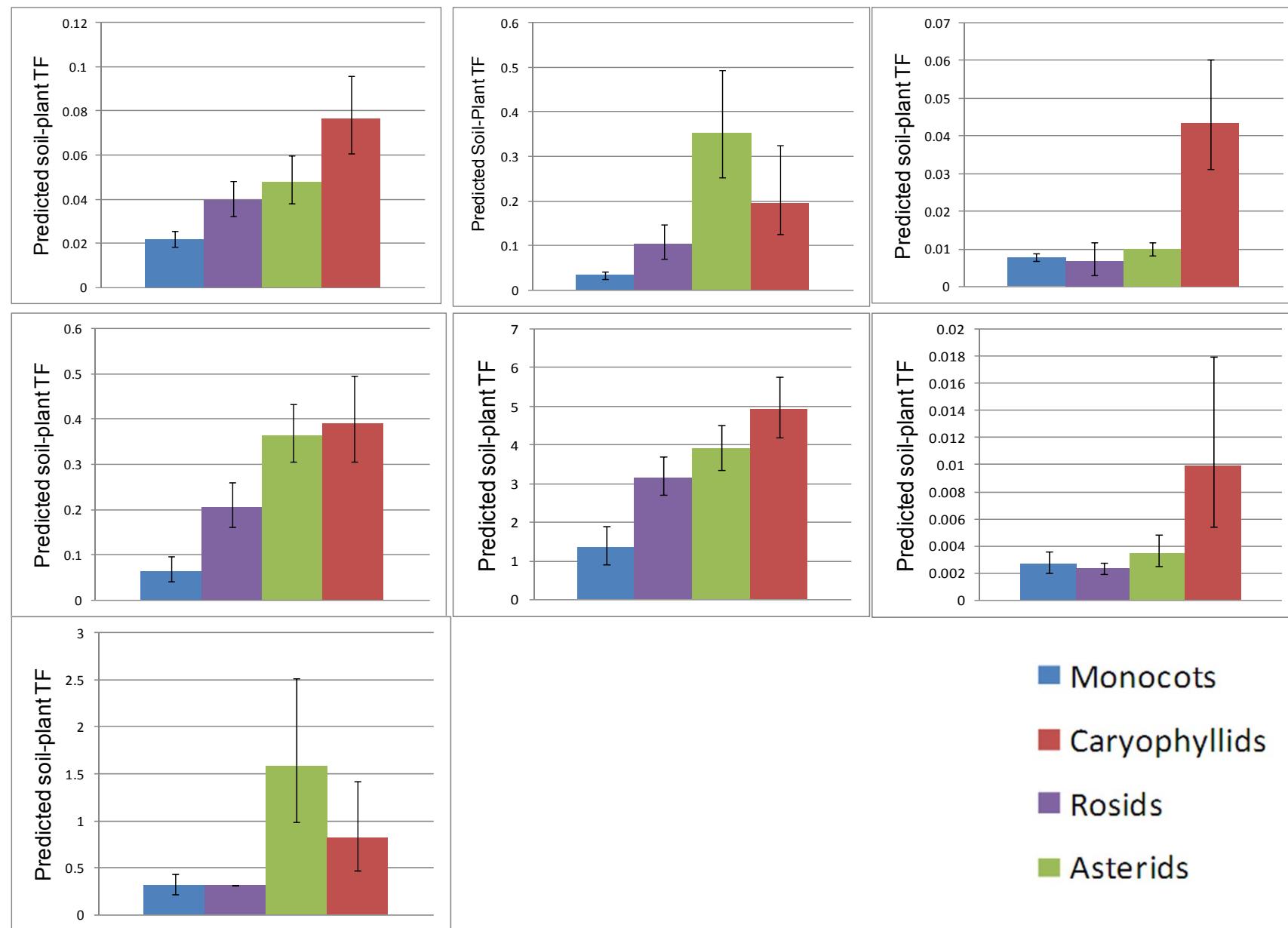
- There is some bias some datasets, e.g.
 - Lots of data from Canada for freshwaters
 - All terrestrial Tc data from UK sand dunes
 - Terrestrial bird/mammal Pu/Am signif. amount of data from Chernobyl zone
- Are there obvious weaknesses in database (probably) which can be quickly addressed?

Freshwater Fishes - Phylogeny

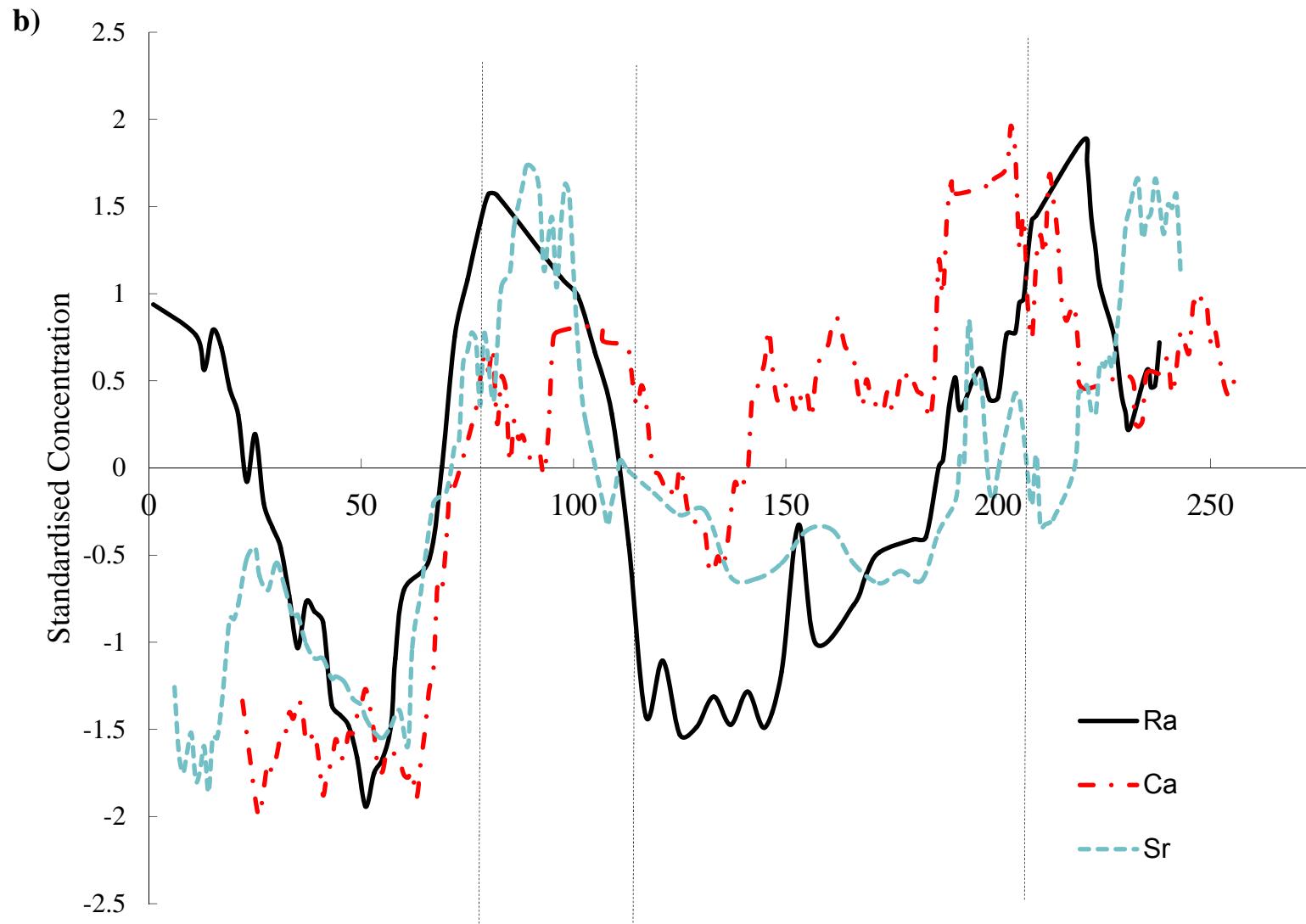
Can evolutionary history be used to categorise transfer?

For plants appear to be phylogenetic relationships for a number of relationships

... and marine organisms – wait until Thursday

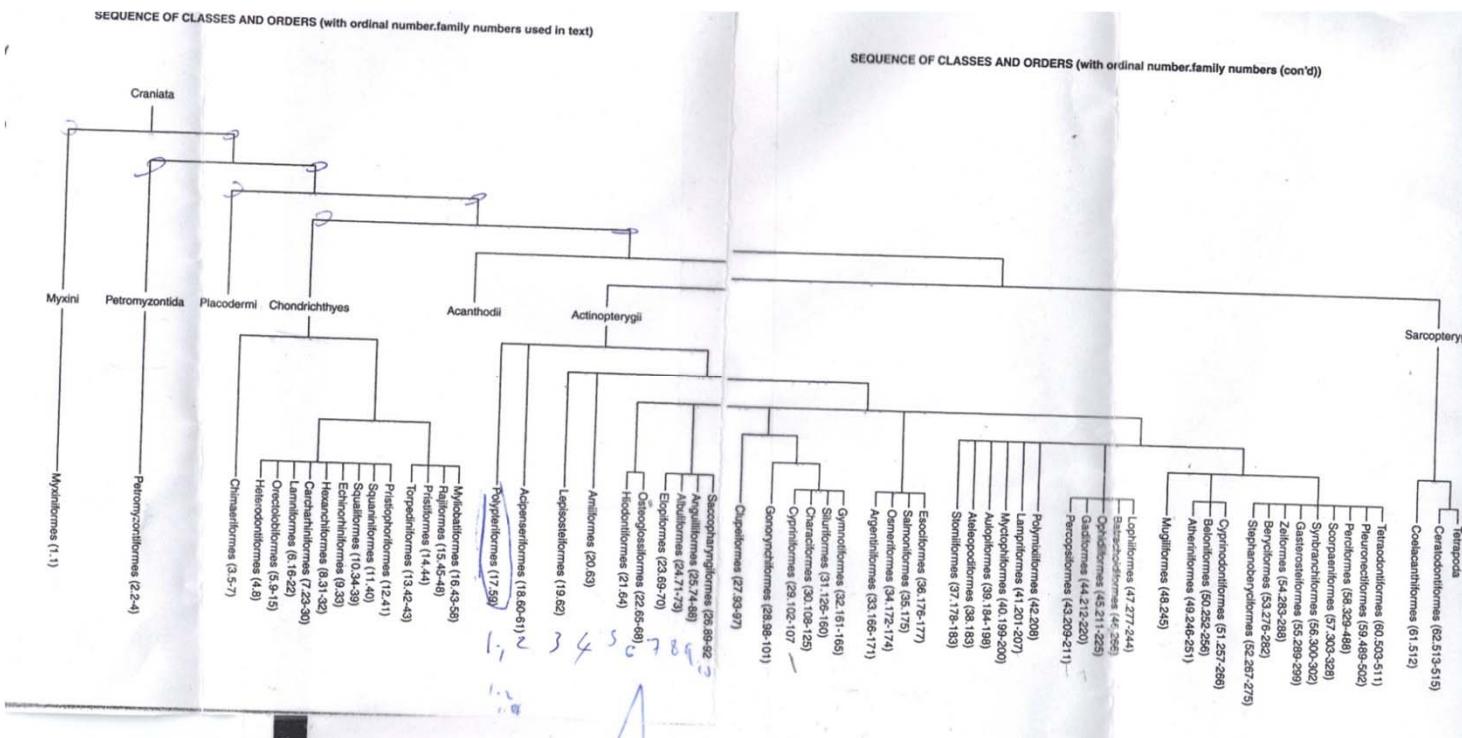


- █ Monocots
- █ Caryophyllids
- █ Rosids
- █ Asterids



Freshwater fish

- Started with Cs
- Data for 12 orders



Orders

- Lepisosteiformes
- Amiiformes
- Clupeiformes
- Cypriniformes
- Siluriformes
- Osmeriformes
- Salmoniformes
- Esociformes
- Gadiformes
- Cyprinodontiformes
- Perciformes
- Scorpaeniformes

