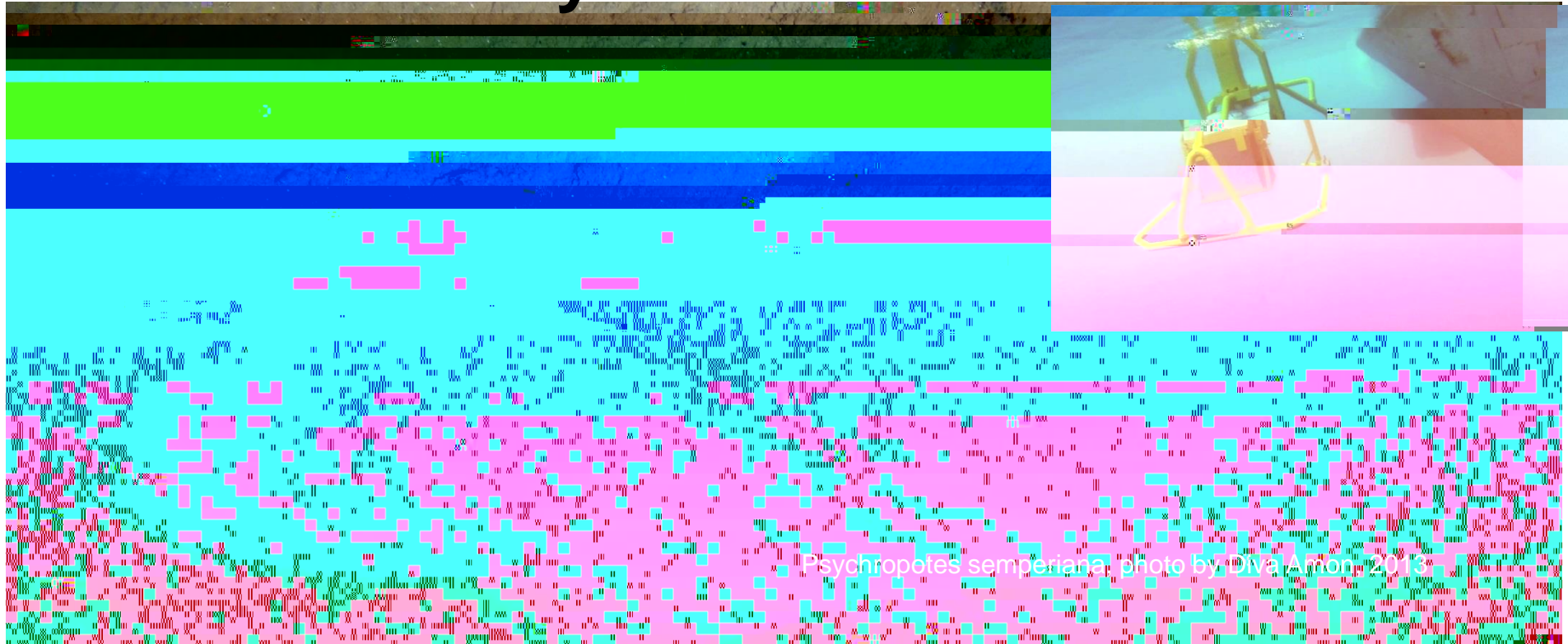


Derivations on a deep-blue theme: disentangling definitions & concepts for MGR in the draft treaty text



Muriel Rabone, Harriet Harden-Davies, Jane Eva Collins, Sabine Zajderman, Ward Appeltans, Gaol Droege, Angelika Brandt, Liliana Pardo-Lopez, Thomas G. Danlgren, Adrian G. Glover, Tammy Horton

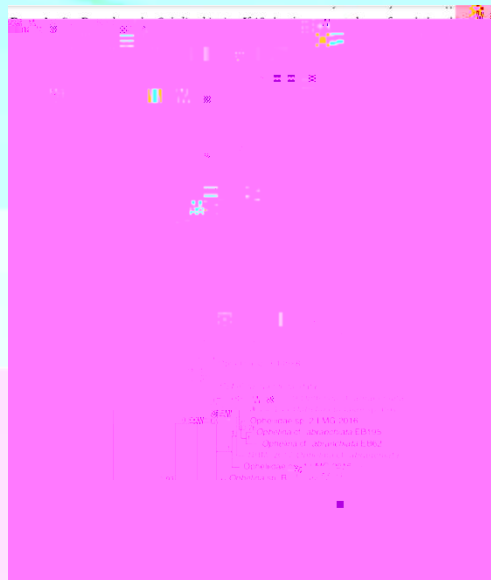
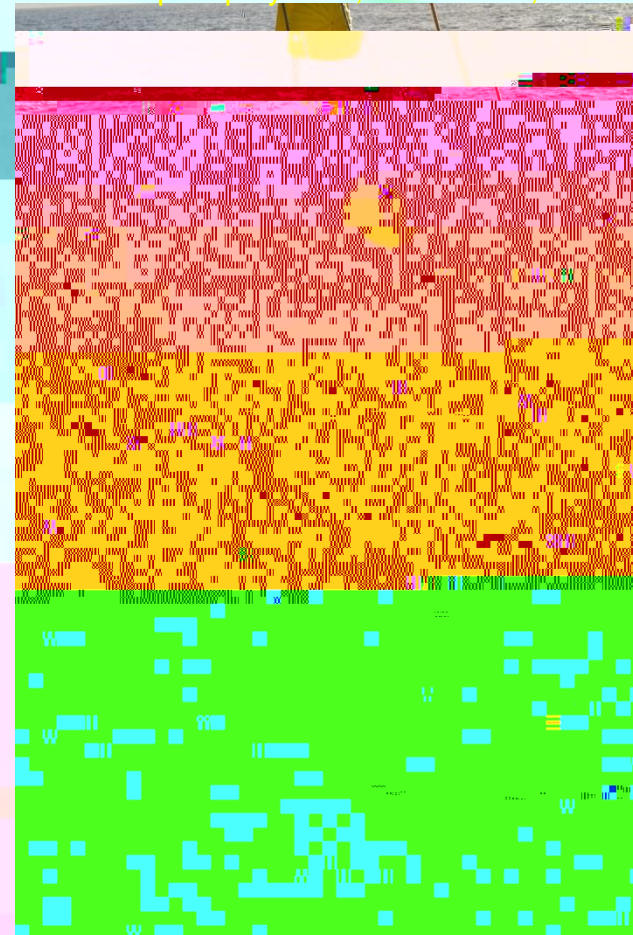
Derivations on a deep-blue theme

Draft treaty text: complexities- definitions MGR, derivatives, DSI++

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Scientific perspective on definitions

Sediment Trap Deployment, Brie Maillot, 2015



Scolecida sequences, Wiklund et al, accepted

Oneirophanta sp. Amon, 2013

A derivation on DSI

DSI (DNA Sequence Index) is neither term commonly used

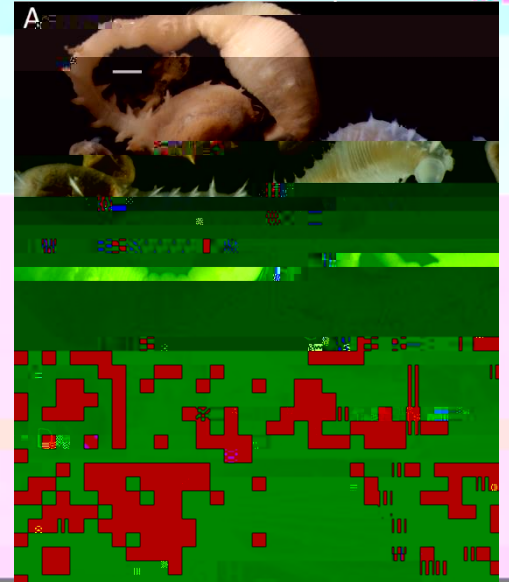
Alternative terms? NSD- Nucleotide sequence data (CETAF 2019): more accurate, representative

Debate on inclusion DSI in definition genetic resources underway in NP

Scolecida sequences, Wiklund et al, accepted



Oligobregma whaleyi sp. n. Wiklund et al, accepted



Oneirophanta sp. Amon, 2013

A derivation on DSI

In light biotech- { [• c ˇ • æ ^ [~ T G Ü , [ˇ | å à ^ ă • ă ă [q • ^ } c @ ă à ă [[* ^ ..

MGR- • æ] | ^ • ă å å ă ă ă ă ă ă d ă • ă ă | ă \ ^ å, å [^ • } ă { ă ^ • ă } ă ă • ^ } • ^ [•] | ă

DSI open by default: any infringement of this highly problematic to science community. Ensure steps taken to avoid any risk of potential restrictions



Slicing megacore, courtesy Eric Vetter, CCZ, 2013



Partitioning core, courtesy Ward Appeltans

Derivatives: definitions

Nagoya Protocol: *'naturally occurring biochemical compound resulting from the genetic expression or metabolism of biological or genetic resources, even if it does not contain functional units of heredity',*

therefore encompassing secondary metabolites, enzymes, natural products.

Draft treaty text: *'could be anything- tissue sample, DNA extraction*

Marlowe et al (2019) DOSI policy brief



BBPJ %p[] @ |^+

difficult to argue that a derivative (protein, natural product etc) is included in
@@ a^q } [~* ^} ^{ æ^|æ, @} @@^ a[} @&[} æ DPA.

BUT most biotech from secondary metabolites, natural products
In terms tracing commercial utilisation for monetary benefits would miss this
derivatives ARE included in monitoring in treaty, nb not as separate definiton



Backtracking to functional units:

microbial or other origin containing **functional units of heredity**...

functional gene referring to protein coding but that small fraction of genes.

Anything from an organism- gene, 2ndary metabolite ultimately from DNA,
ÜPA•[&]•ã^! ap^!)aa^ { [|^ •] ^&ãã|ã * ~ æ ^ ^ . * . &[} caã ã * DPA [|
ÜPAq(DOSI commentary draft text 2019)



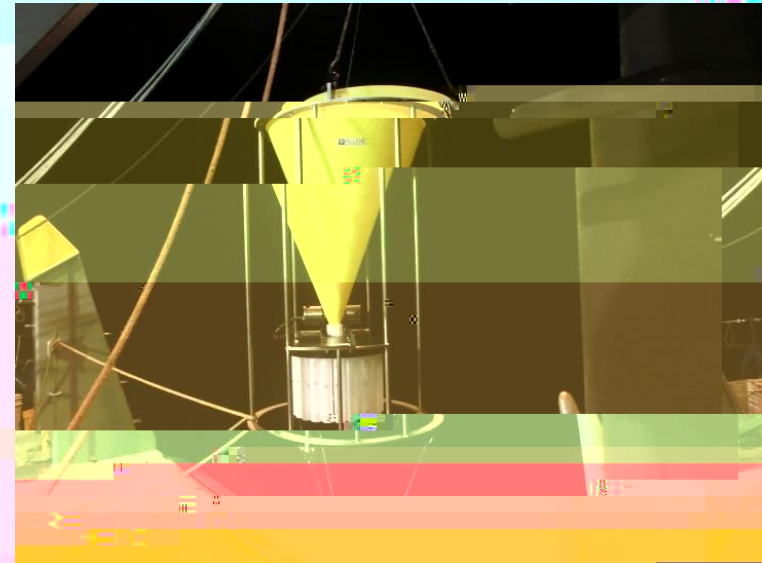
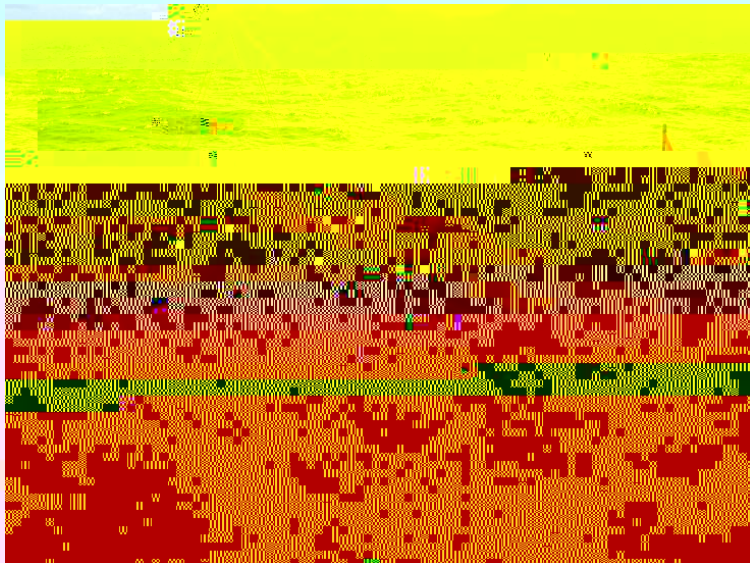
Deep blue theme: coastal states and MGR

9.2 [in cases where MGR of ABNJ are also found within AWNJ, activities with respect to those resources shall be conducted with due regard to rights and legitimate interests of any coastal state under jurisdiction of which such resources are found]

Implies single origin, implies MGR can be known in advance

Key to recognise realities scientific research and fundamental biological realities:

Implies marine systems are static- when their very essence is dynamic

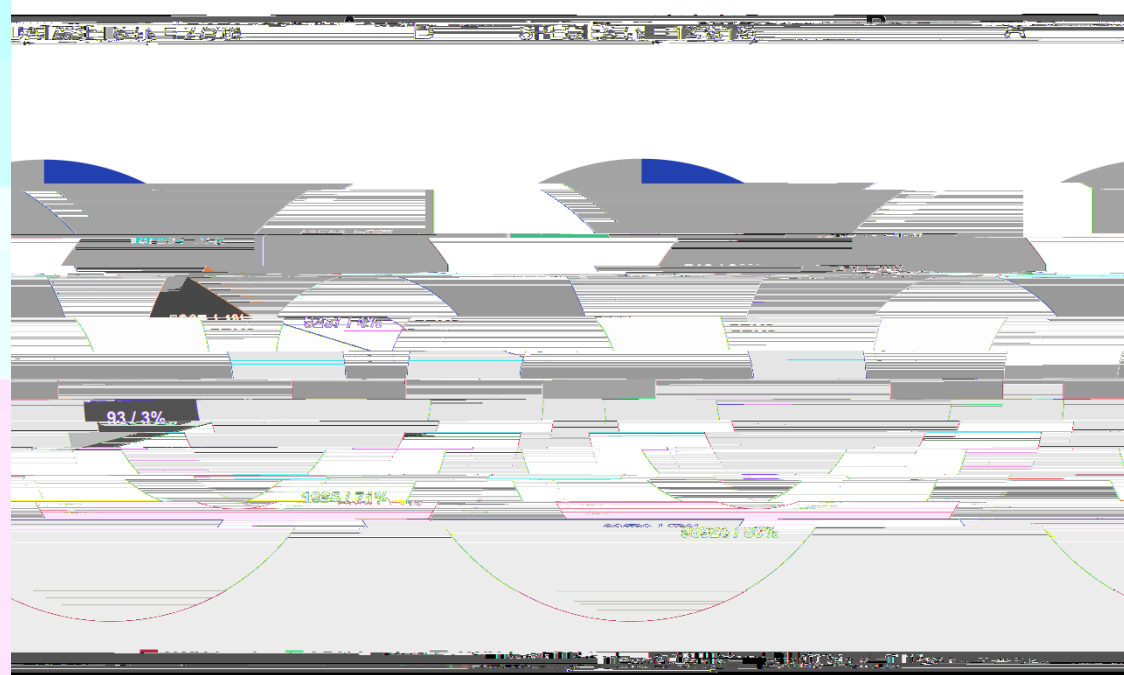
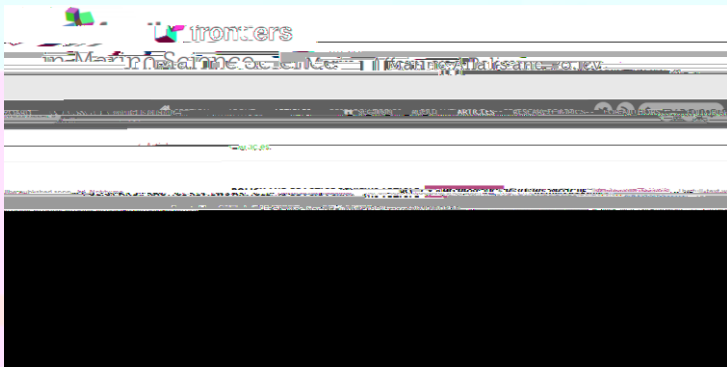


The boundary

Realities of research- where does what apply

most data on OBIS- AWNJ, 26% over both AWNJ and ABNJ, via OBIS Feb 2019
(Rabone et al, in press)

Potential for confusion and unintentional non-compliance



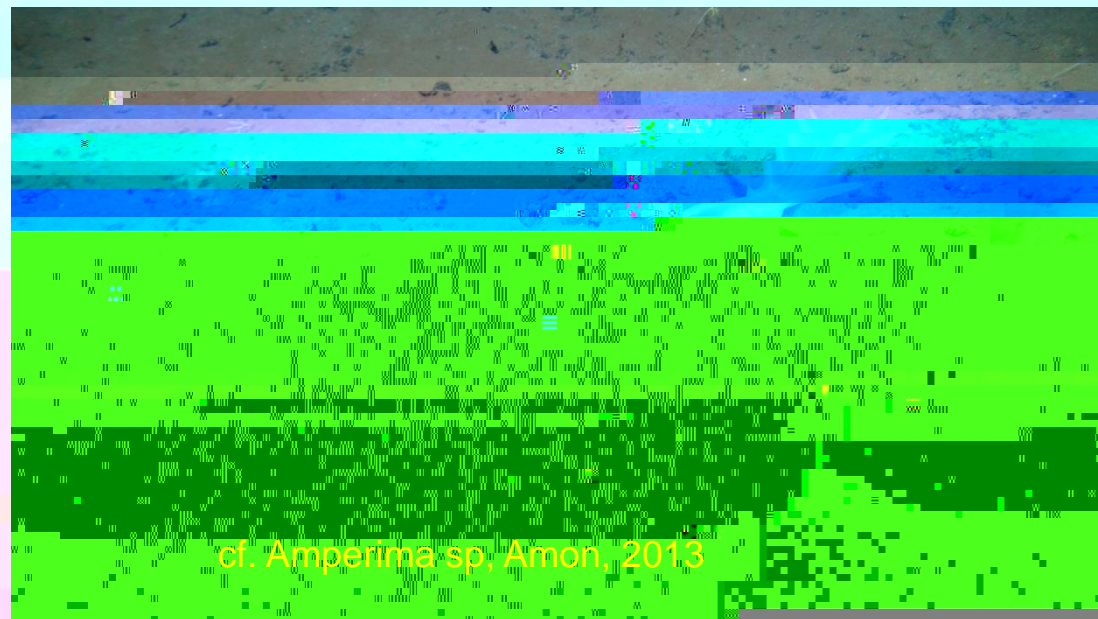
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MGR: marine genetic material of actual or potential value-

Value- means?

Intrinsic value- scientific, ecological, environmental, societal, educational, cultural value MGR- full value (Marlow et al 2019)

Referenced in CBD preamble



Open Access MGR samples:

Art 10.3 Ensure open access to MGR ex situ

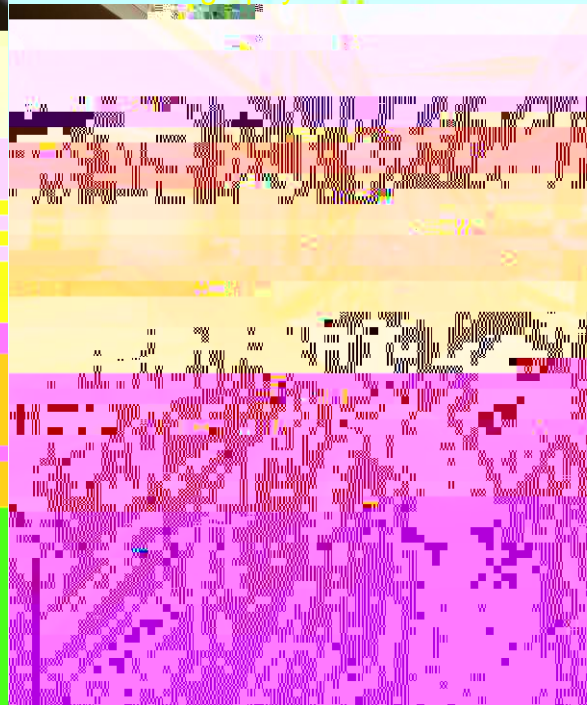
Critical to allow sharing benefits, and also encourage reuse

Need guidelines for judicious use of a potentially **finite** resource:
MGR samples finite unlike MGR data

Discovery Collections. Courtesy of Tammy Horton, National Oceanography Centre



Chiho Ikebe, Natural History Museum





SUMMARY

Learn lessons Nagoya: clarity on definitions

institutions recognise, support, realise research AND adapt with science

However regulations play out, maintenance of open access critical

Non-monetary benefit sharing- access to MGR key- should be emphasised in treaty

Jackie Mackenzie-Dodds, Chiho Ikebe, Sarah Long, Chris Lyal, Matt Woodburn,
Gordon Patterson, Miranda Lowe, Emma Sherlock, Marcel Jaspars, Maria Baker,
Jeff Marlow, Kristina Gjerde, Sergio Taboada, Craig Smith, Magdalena Georgieva,
Madeleine Brasier, Pedro Martinez Arbizu, John Taylor, Christiane Todt, Les Watling,
Chris Mah, Vă Uq Hææ Uæå ^ Zadjerman, Torben Rhiel, Lupita Bribiesca-Contreras

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NORCE

