

Making NDFs for seahorses (*Hippocampus* spp.)

International Expert Workshop on
CITES Non-Detriment Findings

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Outline

- Seahorse life history
- Seahorse exploitation and trade
- Interim measures
 - Minimum size limit
 - Protecting habitat
 - Enforcing existing laws
 - Aquaculture
- More precise measures
 - Information needs
- A web based tool

Hippocampus spp.



H. kelloggi



H. kuda



A Guide to the Identification of Seahorses

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TRAFFIC
— NORTH AMERICA —

Project Seahorse
ADVANCING MARINE CONSERVATION

Seahorse life history and the consequences

Life History Trait	Conservation consequence
low population densities	Vulnerable to extirpations
low mobility small home range sizes	slow to recolonize over-exploited areas
low rates of natural mortality	heavy fishing will place unsustainable pressure on population
male brooding	survival of young depends on survival of male
monogamy	partner stops reproducing, at least temporarily
small brood size	limits potential reproductive rate (may be offset by higher juvenile survival)

CONCLUSION:



NOT SUITED FOR HEAVY EXPLOITATION

Summary 2006 Red List

EN	VU	DD
1	9	23

when data are very uncertain assign DD –
does not mean the species is not threatened

Trade

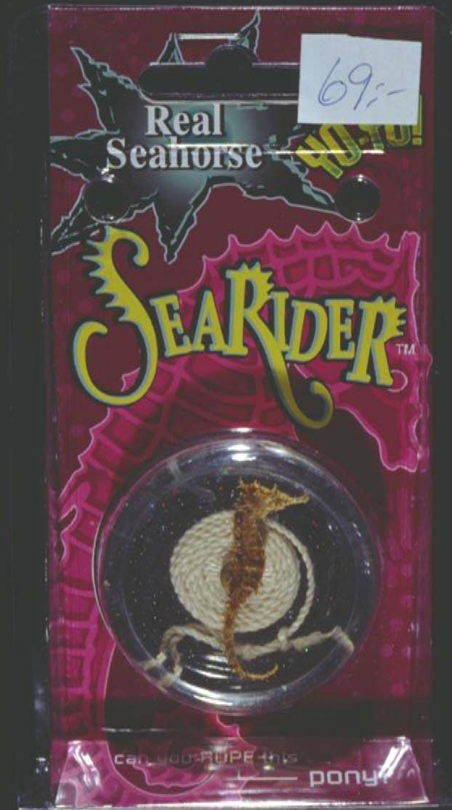
Traditional medicines



Ornamental display

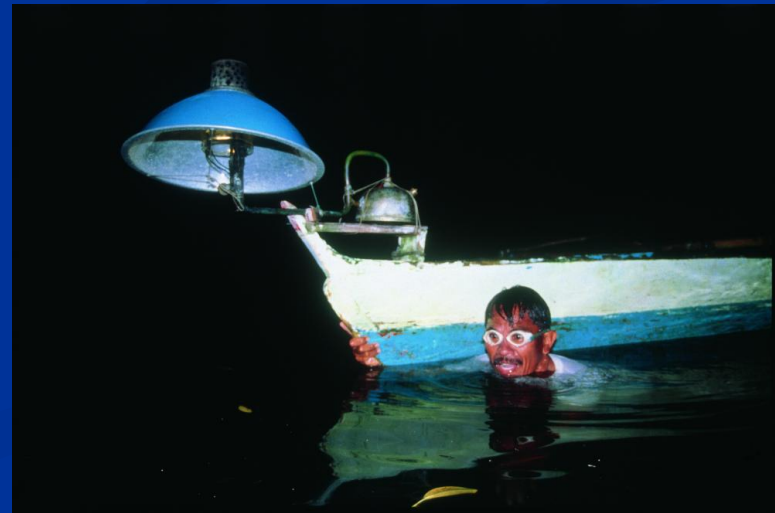


Curiosities



Exploitation

- Enter trade from:
 - Bycatch from shrimp trawlers (largest source - mostly dried trade)
 - Target fisheries (live and dried trade)
 - Aquaculture (all live trade)



Trade impacts

- Fishers, traders and informants in many countries report that seahorse catches have declined, often despite increased fishing effort
- Trade volumes may be maintained by geographic expansion, greater retention of bycatch, greater sale of incidental landings
- Loss of habitat is a grave concern



Making NDFs now

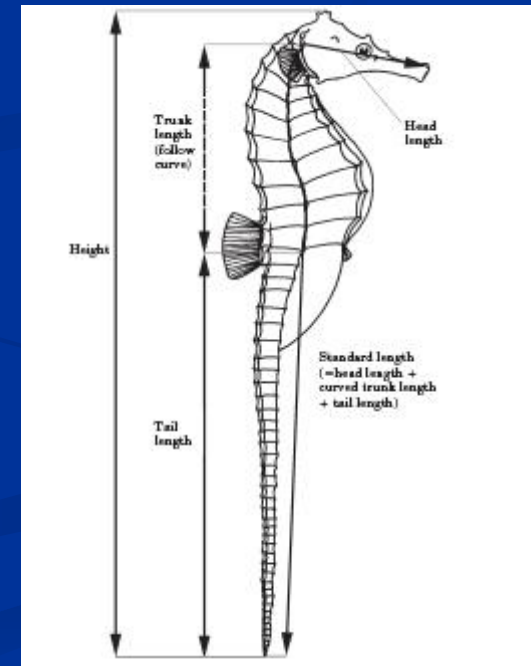
- No information on abundance and exploitation = no information to set quotas
- BUT to overcome the immediate difficulties can use other management tools
- Evoke principles of adaptive management
- Possible interim measures for wild seahorses
 - Minimum export size
 - Protect seahorse habitats
 - Enforce existing laws
- **Rules of thumb**

Important to remember

- Parties are at liberty to do what they want to make NDFs under CITES – the following are *recommendations* of interim measures where Parties lack other options/opportunities

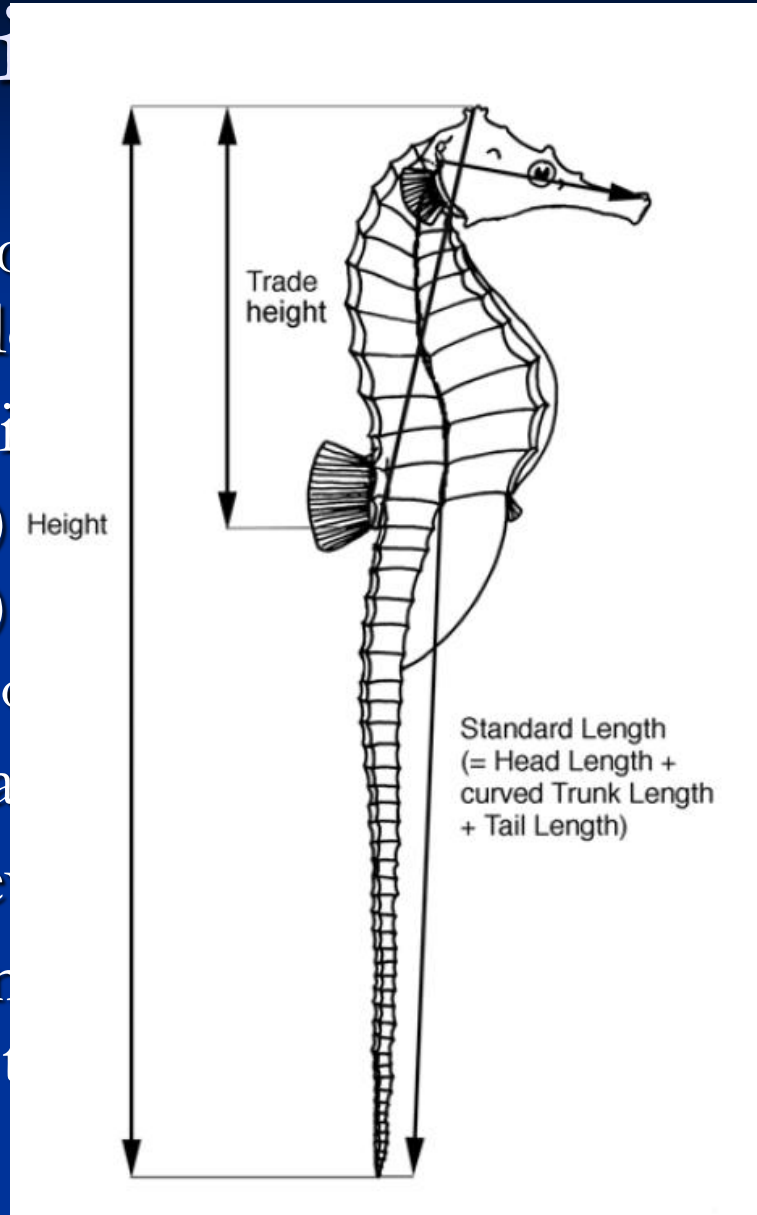
Minimum export size

- Decision 12.54
- Present recommendation = 10 cm height
- Biologically sound
- Need limited data
- Tried with other species
- Apply to dried and live trades
- Relatively easy to enforce
- ... especially if many Parties adopt



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- Surveyed seahorse in British Columbia and Los Angeles
- Recommends a maximum size limit:
 - 14 cm (6.25")
 - 13 cm (5.75")
 - Trade height of 10 cm
- Clear biological basis for a size limit
- BUT would severely impact the species
- Need to determine economic effects of implementing a size limit



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Protect habitats

- Protecting seahorse habitats should protect seahorse populations
- Useful where seahorses are caught as bycatch
- Ideally would protect areas of seahorse occupancy (where known)
- What % of habitats to protect?
- (Changes to fishing techniques)



Enforce laws

- Enforcement of existing laws (e.g., trawling bans in specific areas) is needed to improve the conservation of seahorses
- Many countries currently ban trawling in coastal waters
- Seahorses collected from these illegal fisheries should not be exported under CITES provisions for legal acquisition



Management options and stakeholders' views

HIGHEST
PREFERENCE

Minimum Size Limits

Marine Protected Areas

Tenurial Systems

Temporal Closures

Sex-Selective Fishing

Total Allowable Catch

Reduced Number of Fishers

LOWEST
PREFERENCE

Maximum Size Limits

Slot Size Limits

Aquaculture

- Need to determine production capabilities, degree of reliance on wild populations, and environmental concerns
- Need for marking systems to distinguish aquacultured seahorses from wild-caught specimens
- For now must rely on thorough paper documentation
- No need to impose a standard minimum export size for aquacultured seahorses produced in non-detrimental facilities

Making NDFs later

- More accurate measures for making NDFs on species and population specific levels are needed
- Requires collection of basic data
- two different types of data should be collected:
 - a) fisheries and
 - b) population data

Any data is better than none!

- When vital resources are rapidly degrading ... we often have neither the time nor the resources for such data-gathering... The choice is between giving imperfect advice or none at all. Data-less and data-poor management are ... an imperative... Management should be judged by its fruits, not its roots

(Johannes 1998)

Data needs

Information needed	Fishery (landings surveys)	Population (field surveys)
which species	are caught	are observed
where (locations, depth, habitat)	at which they are caught	at which they are found
when (time of year)	at which they are caught	at which they are found
how many	are caught PER UNIT EFFORT (including discards)	are observed
size structure	of captured individuals	of observed individuals
sex (male, female, juvenile)	of captured individuals	of observed individuals
pregnant (yes/no)	of captured individuals	of observed individuals

Also need: species, numbers and sizes in trade

Future NDFs?

- Info on population size and intrinsic rates of population increase = quotas
- Info on reproductive peaks = seasonal closures of trawl grounds
- Info on population specific height at maturity = population specific minimum size limits

Assessing sustainability

- Long-term monitoring of these data will also provide an indication of population health
- Recommended that Parties use indicator fisheries and trades to test and evaluate various management measures through an adaptive management process

Changes since listing

- **Dried trade – TCM importers/wholesalers**
 - Listing appears to have had little effect
 - International trade regulations are necessary
 - Worry about potential negative impacts on their business
- **Live trade**
 - Listing has had an effect: changes in sources, increased importance of cultured individuals, sizes declined, volumes dropped and values doubled
 - Neutral or positive about CITES listing

Hippocampus Info

- www.hippocampusinfo.org
- a web-based tool to assist countries in preparing scientifically sound and defensible NDFs for seahorses
 - Seahorse identification
 - Seahorse trade statistics
 - Resources about seahorse distribution, biology and trade
 - Generic resources about marine conservation issues and solutions
 - Country-specific information
 - Decision tools to assist Parties make NDFs

Acknowledgements

- Guylian Chocolates, Belgium



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