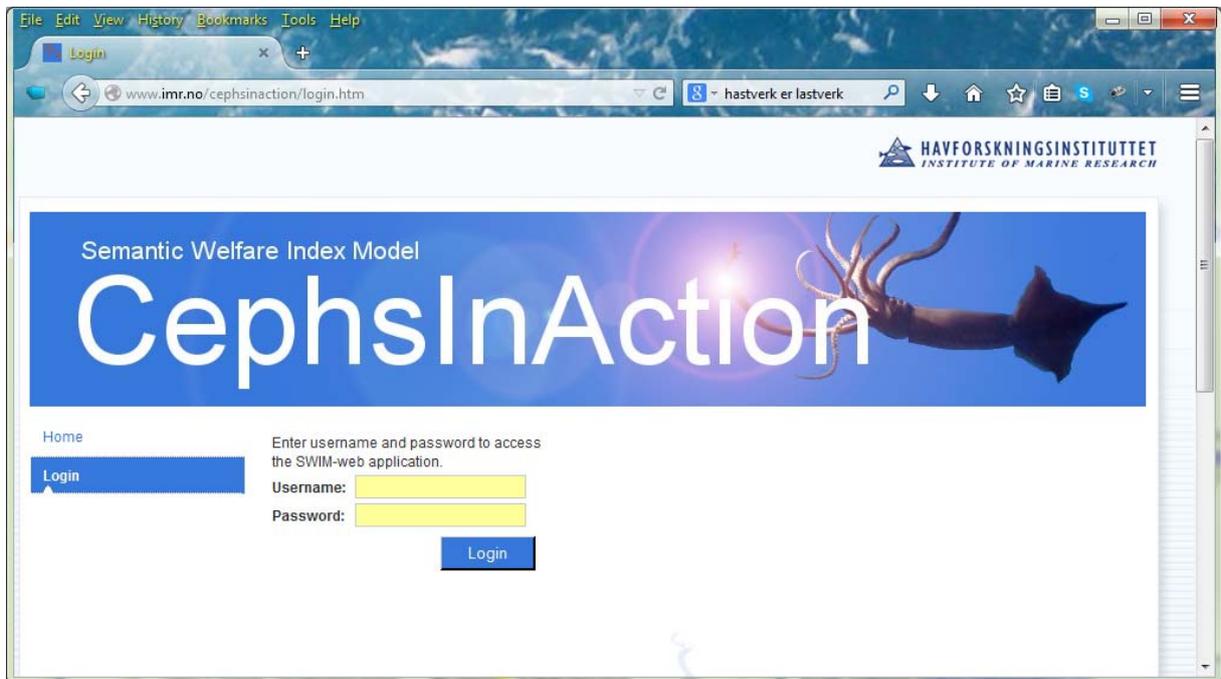


# CephsInAction database manual

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## 1 Login

Web-address to the CephsInAction database application: <http://www.imr.no/cephsinaction/>

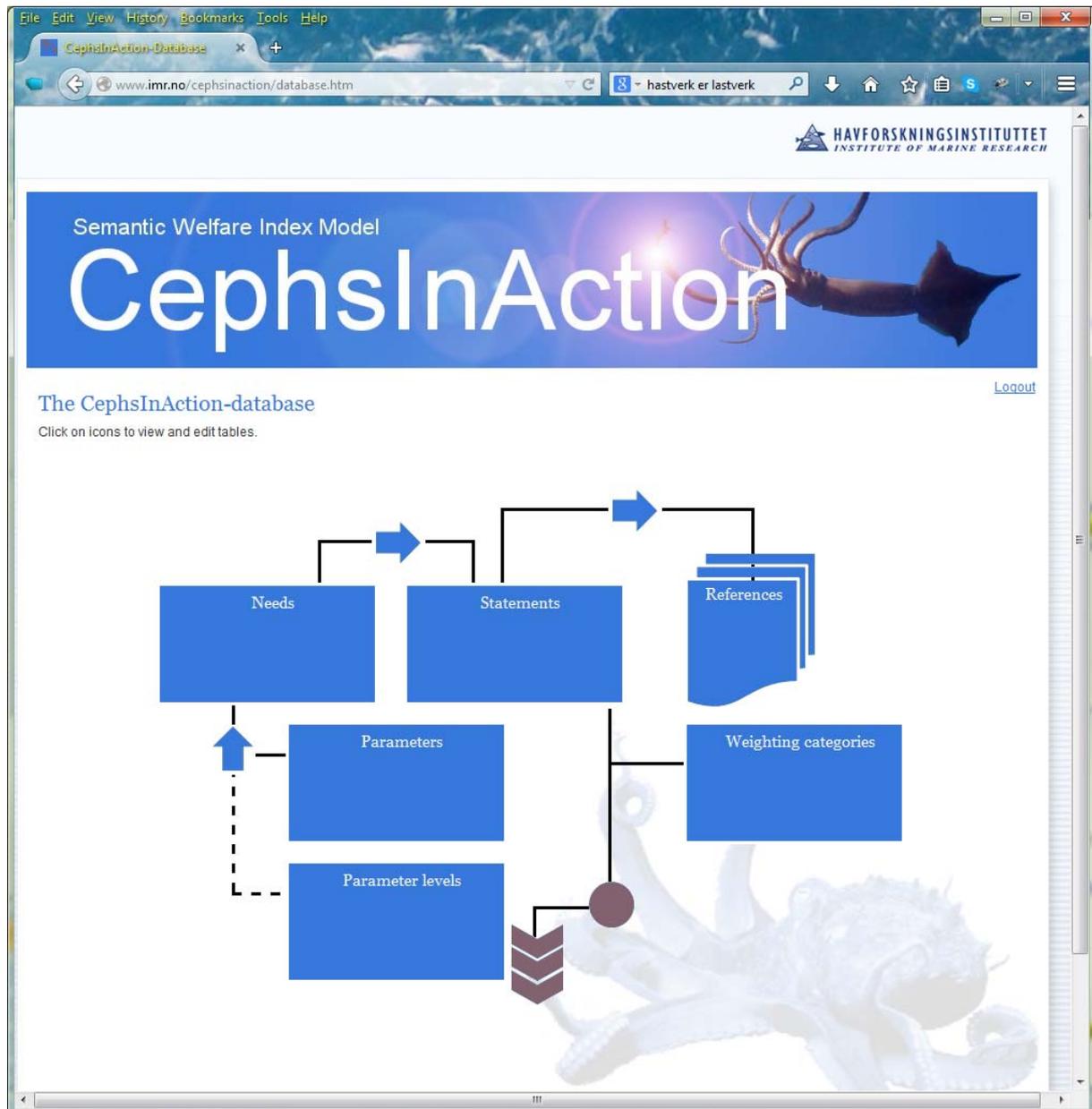


*The CephsInAction database application Login page.*

Enter username and password. If you do not have, or have forgotten your, username and/or password email Lars H. Stien: [lars.stien@imr.no](mailto:lars.stien@imr.no).

## 2 Database overview

After the login the first page that the application shows is the main page of the database application, this page gives an overview of the different tables in the database and how they are linked.



*The main page of the CephInAction database application. There are six main tables: the Needs, the Statements, the References, the Parameters, the Parameter levels and the weighting categories table. The arrows indicates that elements between the associated tables should be linked.*

### 3 References

A typical workflow when entering data into the database is to find an article with interesting information about how different parameters affect fish welfare (parameters that affect welfare are possible Welfare Indexes (WIs). Example of a possible WI is Appetite). The first step after finding the article is to enter its specifics into the database <Click the **References** element on the database overview page to enter the **References input page**>.

File Edit View History Bookmarks Tools Help

SWIM-Database-References x +

www.imr.no/cephsinaction/references.htm

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HAVFORSKNINGSINSTITUTTET  
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Semantic Welfare Index Model  
**CephInAction**

You are here: > Home > Database > References Logout

Add or update rows in References table

ID	Year	Authors	Title

Publication	Volume	Issue	Pages	Type	Status	Time	User	Store
								No

References table

Show history  Show deleted

ID	Reference	Status	Time	User	Action
7	Boal JG et al. 1999. Effect of crowding on the social behavior of cuttlefish ( <i>Sepia officinalis</i> ) in aquaculture. <i>Journal of Applied Ichthyology</i> 5: 1-6.	added	2014-08-15 10:24:08	larshe	None
8	Fiorito et al. 2015. Guidelines for the Care and Welfare of Cephalopods in Research. <i>Journal of Applied Ichthyology</i> 11: 1-6.	added	2014-09-24 14:35:09	larshe	None
6	Forsythe J, Lee P, Walsh L, Clark T 2002. The effect of crowding on growth of the European cuttlefish ( <i>Sepia officinalis</i> ). <i>Journal of Applied Ichthyology</i> 8: 1-6.	added	2014-08-14 14:04:58	larshe	None
5	Hanlon RT 1990. Maintenance, rearing, and culture of teuthoid and sepioid squids. <i>Journal of Applied Ichthyology</i> 6: 1-6.	added	2014-08-13 13:18:10	larshe	None
4	Moltschanivskiy et al. 2007. Ethical and welfare considerations when using cephalopods in research. <i>Journal of Applied Ichthyology</i> 3: 1-6.	changed	2013-10-08 11:50:41	larshe	None

*The references input page. The first part of the page is a form where you can enter data about the article you want to extract statements of how different parameters affect welfare from. The second part displays a table of the references that already have been added.*

First check that the article is not already references in the database. If not enter information into the form. The information is stored when you select the [Yes]-option in the Store pulldown. The reference is automatically assigned an ID-number that can be used later for quick reference. Click the overview-icon in the lower right corner, or the 'Database'-link after 'You are here', to return to the main page.

## 4 Statements

After the reference data about the article is entered in the database it is time to extract statements about how different parameters affect fish welfare. These statements should be as 'stand alone' as possible, meaning that it should not be necessary to go back and read the original article to know about any caveats; for instance that the statement is only true for already stressed animals. <Click the Statements element on the database overview page to enter the Statements input page>.

### Example of a statement:

“Cuttlefish reared at low densities (0-1 % of surface area) move very little and tend to stay in one area lying together closely. At high densities (~5 % of surface area) they swim about most of the time, and frequently displace each other from the bottom jetting around the rank and inking (stress related behaviour)”



The screenshot shows a web browser window displaying the 'CephInAction' interface. The page title is 'Semantic Welfare Index Model CephInAction'. The browser address bar shows 'www.imr.no/cephsinaction/statements.htm'. The page includes a navigation menu with 'Return to database main page' and 'Logout'. Below the header, there are instructions for adding a statement and linking it to references. The main section is titled 'Add or update rows in Statements table' and contains a table with the following data:

ID	Statement	Status	Time
29	Cuttlefish reared at low densities (0-1 % of surface area) move very little and tend to stay in one area lying together closely. At high densities (~5 % of surface area) they swim about most of the time, and frequently displace each other from the bottom jetting around the rank and inking (stress related	updating	2014-09-25 12:36:50

Below the table, there are three sections for selecting species, subclasses, and life stages:

- Specis(s)**: Common cuttlefish (*Sepia officinalis*) [checked], Common octopus (*Octopus vulgaris*) [unchecked], European squid (*Loligo vulgaris*) [unchecked].
- Subclass(es)**: Cuttlefish (*Sepiida*) [unchecked], Octopus (*Octopoda*) [unchecked], Squid (*Teuthida*) [unchecked].
- Life stage(s)**: Hatchling [unchecked], Juvenile [checked], Adult [unchecked].

A 'Save' button is located at the bottom right of the form.

The upper part of the statements input page contains a form where you can enter statements about how different parameters affect animal welfare, and click for which specie(s), subclass(es) and life stage(s) the statement is about.

After you have entered a new statements into the form, click on which specie(s), subclass(es) and life stage(s) the statement concerns, and then press the **[Save]** button to store the statement.

Repeat this for all statements you can find based on the article you are reading.

It is good to have as much information about how different levels of a parameter affect animal welfare in a statement. Here is another example:

“Cuttlefish reared at high density (~3 % of surface area) hovered more (~75 % vs. ~60 % of the time) and sat at the bottom less(5 % for females and 25 % for males vs ~30 % and ~35 % of the time), had more aggression (display of zebra stripes), had less appetite, and especially females were displaced by other cuttlefish and received injures compared to cuttlefish reared at low density (~0.2 % of surface area).”

ID	Statement	Meta data	Status	Time	User	Action
8	Active species will need space, they swim constantly and may jet ou	Juveniles, Adults, Cuttlefis	changed	2014-08-13	larshe	None
16	Aspects of sepiid biology that are of particular relevance to maintain	Common cuttlefish, Juven	added	2014-08-13	larshe	None
34	Cephalopods are ready feeders with a relatively high metabolicrate	Common cuttlefish, Comm	added	2014-09-24	larshe	None
17	Coastal octopus species are the group of cephalopods best adapte	Common octopus, Juveni	added	2014-08-13	larshe	None
28	Common cuttlefish reared at water temperature of 25°C had higherfoc	Common cuttlefish, Juven	added	2014-08-14	larshe	None
27	Common cuttlefish tolerate crowding, the limiting factors are water qu	Common cuttlefish, Hatch	added	2014-08-13	larshe	None
26	Common cuttlefish tolerate temperatures between 15 and 25 °C. They	Common cuttlefish, Hatch	added	2014-08-13	larshe	None
32	Crowding calculation: By calculating the area of a circle with a diame	Common cuttlefish, Hatch	added	2014-08-15	larshe	None
29	Cuttlefish reared at low densities (0-1 % of surface area) move very li	Common cuttlefish, Juven	changed	2014-08-14	larshe	None
33	Cuttlefish reared at high density (~3 % of surface area) hovered mor	Common cuttlefish, Juven	changed	2014-08-15	larshe	None

The lower part of the statement input page contains a table over the statements in the database.

By default the table of the statements in the database show all statements. If you only want to see statements updated today you can click on the ‘Updated since...’- box. You can update / correct statements by selecting Update in the Action-pulldown. The statement will then appear in the input form, press the **[Save]** button to store the change.

Click the overview-icon in the lower right corner, or the ‘Return to database main page’- link, to return to the main page.

## 5 Linking statements to references

All statements in the database must be linked to at least one reference in order to be valid.

. <Click the arrow element between the statements and the references elements on the database overview page to enter the Statements References linking page>.

The screenshot shows a web browser window displaying the 'CephInAction' interface. The page title is 'Semantic Welfare Index Model CephInAction'. Below the header, there is a navigation bar with 'Return to database main page' and 'Logout' links. The main content area is titled 'Add or delete links between Statements and References'. It includes a form with a checkbox for 'Only non-linked statements in pulldown' and a table for selecting links. The table has columns for ID, Statement, ID, Reference, Status, Time, User, and Action. Below this is a table titled 'Links between statements and references - table' showing existing links between statements and references.

ID	Statement	ID	Reference	Status	Time	User	Action
8	Active species will need space, the	4	Moltschaniwskyj et al. 2007. Ethica	added	2014-08-13 12:28:5	larshe	None
16	Aspects of sepiid biology that are c	4	Moltschaniwskyj et al. 2007. Ethica	added	2014-08-13 12:29:3	larshe	None
34	Cephalopods are ready feeders w	8	Fiorito et al. 2015. Guidelines for the	added	2014-09-24 14:41:3	larshe	None
17	Coastal octopus species are the g	4	Moltschaniwskyj et al. 2007. Ethica	added	2014-08-13 12:29:3	larshe	None
28	Common cuttlefish reared at water	6	Forsythe J, Lee P, Walsh L, Clark T	added	2014-08-14 14:05:1	larshe	None
27	Common cuttlefish tolerate crowdin	5	Hanlon RT 1990. Maintenance, rea	added	2014-08-14 12:29:5	larshe	None
26	Common cuttlefish tolerate temper	5	Hanlon RT 1990. Maintenance, rea	added	2014-08-14 12:31:3	larshe	None
32	Crowding calculation: By calculatin	6	Forsythe J, Lee P, Walsh L, Clark T	added	2014-08-15 09:52:4	larshe	None

The references statements linking page. The first part of the page is a form where you select which statement to link with which reference. The second part displays a table of statements-reference links.

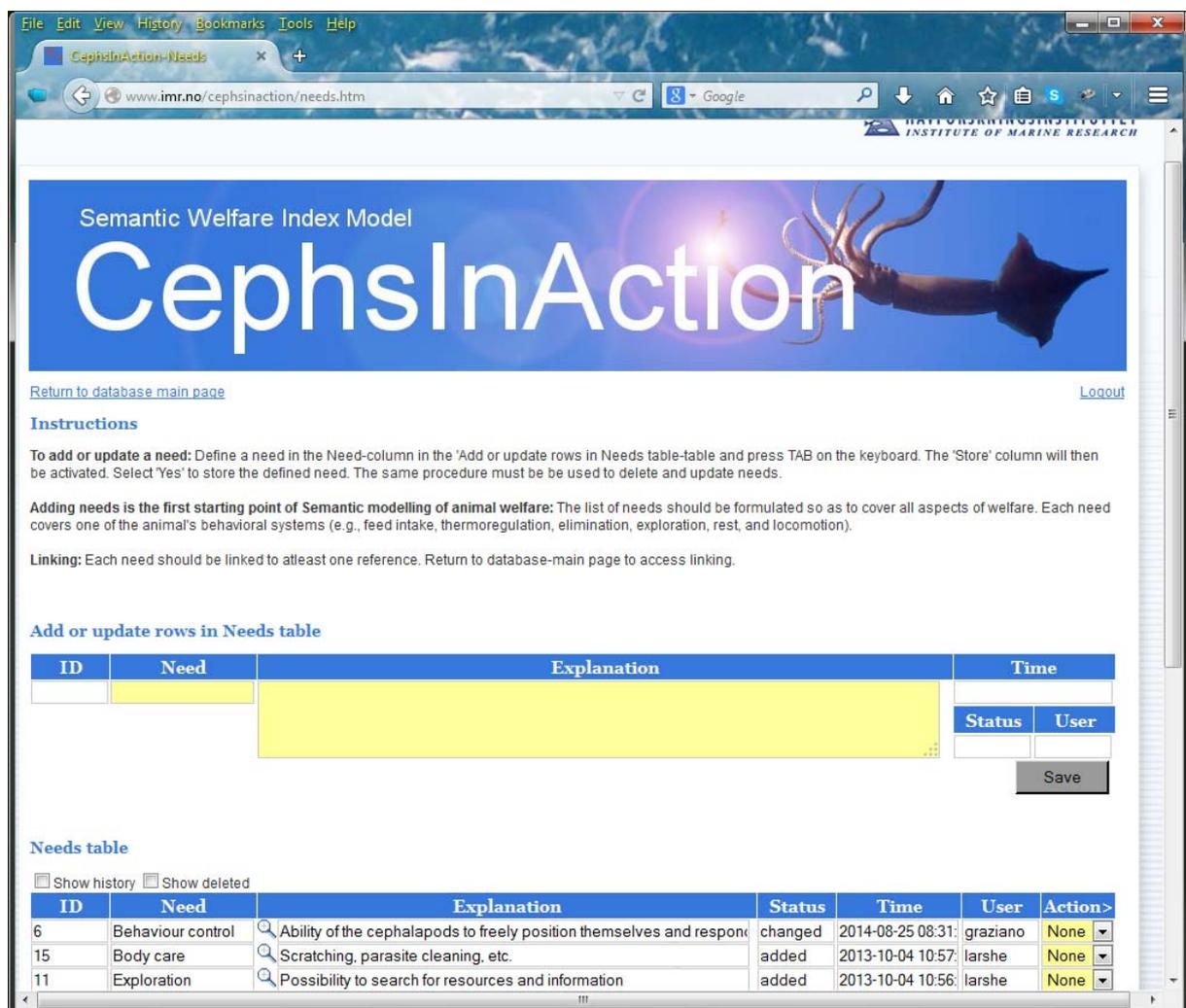
To link a statement with a reference select the statement in the pulldown and the correct reference in the pulldown. This work can be made easier by having the 'Only non-linked statements in pulldown' option hatched.

Click the overview-icon in the lower right corner, or the 'Return to database main page'- link, to return to the main page.

## 6 Needs

The qualitative welfare experience of an animal is created by the reward and punishment systems in the emotional brain, and involves experience, memories and re-evaluation of needs in anticipation of physiological, psychological and behavioural requirements. Based on this in semantic modelling we assume that the animal experience a continuum of welfare states, which may vary from very poor to excellent and that are closely related to the degree of fulfilment of the animals' welfare needs, i.e. needs monitored by the emotional brain.

The needs table in the database is based on the list of needs presented in Stien et al., 2013 for salmon. To update with cephalopod specific needs enter the need, and rationale for why this is a need into the form and press the [Save]-button.



**Instructions**

To add or update a need: Define a need in the Need-column in the 'Add or update rows in Needs table-table and press TAB on the keyboard. The 'Store' column will then be activated. Select 'Yes' to store the defined need. The same procedure must be used to delete and update needs.

**Adding needs is the first starting point of Semantic modelling of animal welfare:** The list of needs should be formulated so as to cover all aspects of welfare. Each need covers one of the animal's behavioral systems (e.g., feed intake, thermoregulation, elimination, exploration, rest, and locomotion).

**Linking:** Each need should be linked to atleast one reference. Return to database-main page to access linking.

**Add or update rows in Needs table**

ID	Need	Explanation	Time	Status	User

**Needs table**

Show history  Show deleted

ID	Need	Explanation	Status	Time	User	Action>
6	Behaviour control	Ability of the cephalopods to freely position themselves and respon	changed	2014-08-25 08:31	graziano	None
15	Body care	Scratching, parasite cleaning, etc.	added	2013-10-04 10:57	larshe	None
11	Exploration	Possibility to search for resources and information	added	2013-10-04 10:56	larshe	None

*The upper part of the needs page contains a form where you can enter new needs for cephalopod, the lower part contains a list of suggested needs.*

Click the overview-icon in the lower right corner, or the 'Return to database main page'- link, to return to the main page.