

An Introduction to *i*SCAM

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Outline

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- Obtaining source code

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Obtaining *i*SCAM source code



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Source code available at:

<http://code.google.com/p/iscam-project/>

Use subversion to checkout a copy

On Mac & Linux, in Terminal:

```
svn checkout http://iscam-project.googlecode.com/svn/trunk/ iscam-project-read-only
```

On Windows use a subversion client

<http://tortoisesvn.net/>

Useful SVN commands

Usage: `svn command`

Command	Description
<code>checkout</code>	Check out a working copy from a repository.
<code>info</code>	Display information about a local or remote item.
<code>update</code>	Bring changes from the repository into the working copy.
<code>log</code>	Show the log messages for a set of revision(s) and/or file(s).
<code>revert</code>	Restore pristine working copy file (undo most local edits).
<code>commit</code>	Send changes from your working copy to the repository.
<code>diff</code>	Display the differences between two revisions or paths.
<code>help</code>	Display help (usage <code>svn help <command></code>)

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- iSCAM-trunk
 - ▶ dist
 - ▶ docs
 - ▶ examples
 - ▶ fba
 - ▶ scripts
 - ▶ src

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- iSCAM-trunk

- ▶ dist
 - ▶ debug
 - ▶ R
 - ▶ release
- ▶ docs
- ▶ examples
- ▶ fba
- ▶ scripts
- ▶ src

`dist` contains the compiled
ADMB code in `debug` and
`release` versions, and the R
scripts for dealing with output.

Directory structure

- iSCAM-trunk

- ▶ dist
- ▶ docs
 - ▶ API
 - ▶ iSCAM-guide
 - ▶ userGuide
- ▶ examples
- ▶ fba
- ▶ scripts
- ▶ src

docs contains directories for the users guide, this presentation, and the API documentation for the source code.

The users guide and presentation is written in latex, and the API is built using doxygen.

Directory structure

- iSCAM-trunk

- ▶ dist
- ▶ docs
- ▶ examples
 - ▶ 4VWXHerring
 - ▶ Cusk
 - ▶ ...
 - ▶ Makefile
 - ▶ makeproject
- ▶ fba
- ▶ scripts
- ▶ src

examples directory contains several different examples and a Makefile for running the examples.

makeproject is a Unix script for setting up a new example directory.

Directory structure

- iSCAM-trunk

- ▶ dist
- ▶ docs
- ▶ examples
- ▶ fba
 - ▶ BC-herring-2011
 - ▶ makeproject
 - ▶ ReadMe.txt
- ▶ scripts
- ▶ src

fba is a directory for “full blown assessment”

The ReadMe.txt file documents the various projects, and makeproject is a Unix script for setting up a new assessment directory.

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 - ▶ scripts
- ▶ src

`scripts` contains various scripts that are copied into assessment directories.

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- ▶ docs
- ▶ examples
- ▶ fba
- ▶ scripts
- ▶ src
 - ▶ admb-code
 - ▶ r-code

src contains directories for the
ADMB source code and the
R-code and source files for the
R-package.

Editors

Windows

- Textpad <http://www.textpad.com/>

Mac OSX

- Textmate <http://macromates.com/>

Linux

- Vim <http://www.vim.org/>

Cross platform

- Emacs <http://www.gnu.org/s/emacs/>
- eclipse <http://www.eclipse.org/>
- sublime <http://www.sublimetext.com/>

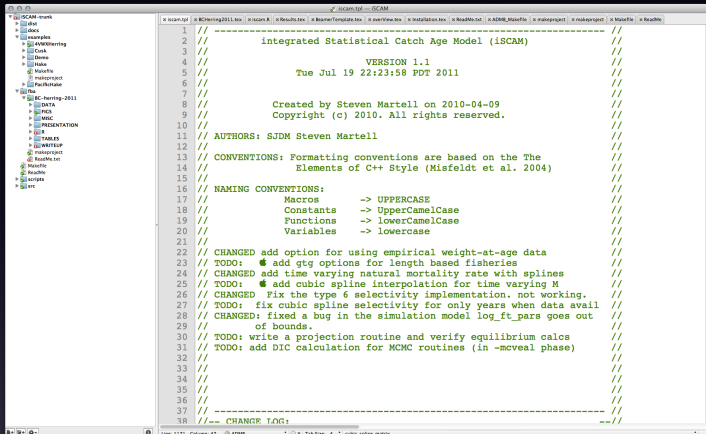
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```
1  !! -----
2  !!               integrated Statistical Catch Age Model (iSCAM)
3  !! -----
4  !!
5  !!               VERSION 1.1
6  !!               Tue Jul 19 22:23:58 PDT 2011
7  !!
8  !!               Created by Steven Martell on 2010-04-09
9  !!               Copyright (c) 2010. All rights reserved.
10  !!
11  !!  AUTHORS: SJDM Steven Martell
12  !!
13  !!  CONVENTIONS: Formatting conventions are based on the The
14  !!                  Elements of C++ Style (Misfeldt et al. 2004)
15  !!
16  !!  NAMING CONVENTIONS:
17  !!                      Macros      -> UPPERCASE
18  !!                      Constants   -> UpperCamelCase
19  !!                      Functions   -> lowerCamelCase
20  !!                      Variables   -> lowercase
21  !!
22  !!  CHANGED add option for using empirical weight-at-age data
23  !!  TODO:  * add gtr options for length based fisheries
24  !!  CHANGED add time varying natural mortality rate with splines
25  !!  TODO:  * add cubic spline interpolation for time varying M
26  !!  CHANGED Fix the type 6 selectivity implementation. not working.
27  !!  TODO:  fix cubic spline selectivity for only years when data avail
28  !!  CHANGED: fixed a bug in the simulation model log_ft_pars goes out
29  !!              of bounds.
30  !!  TODO: write a projection routine and verify equilibrium calcs
31  !!  TODO: add DIC calculation for MCMC routines (in -mcveal phase)
32  !!
33  !!
34  !!
35  !!
36  !!
37  !! -----
38  !!== CHANGE LOG: ==--
```

Figure: Textmate on Mac OS X

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Compiling ADMB source code

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What you need:

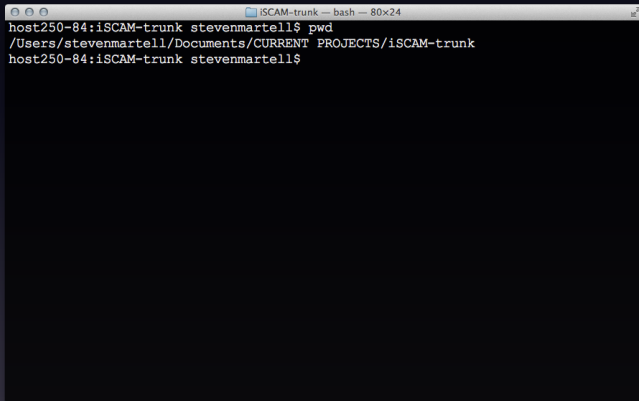
- C++ compiler (gcc recommended)
 - ▶ Mac OSX: install Xcode from appstore
 - ▶ Linux: <http://gcc.gnu.org/>
 - ▶ Windoze: <http://www.mingw.org/>
- ADMB libraries:
<http://admb-project.org/downloads>

ADMB source code for *iSCAM* found in:
`./iSCAM-trunk/src/admb-code/`

Compiling from the command line

At the command line:

- use `cd` to navigate to the `./iSCAM-trunk` directory

A terminal window titled "iSCAM-trunk — bash — 80x24" is shown. The prompt is "host250-84:iSCAM-trunk stevenmartell\$". The user enters "pwd" and the output is "/Users/stevenmartell/Documents/CURRENT PROJECTS/iSCAM-trunk". The prompt then returns to "host250-84:iSCAM-trunk stevenmartell\$".

```
host250-84:iSCAM-trunk stevenmartell$ pwd
/Users/stevenmartell/Documents/CURRENT PROJECTS/iSCAM-trunk
host250-84:iSCAM-trunk stevenmartell$
```


Compiling from the command line

At the command line:

- use `cd` to navigate to the `./iSCAM-trunk` directory
- Linux or Mac OSX: type `Make`

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```
iSCAM-trunk — bash — 80x24

cp iscam ../../dist/debug
make --directory=src/admb-code --file=linux.mak opt
admb iscam

*** tpl2cpp iscam

*** CXXFLAGS="-m64" adcomp iscam
g++ -c -m64 -O3 -Wno-deprecated -D_GNUDOS_ -Dlinux -DOPT_LIB -DUSE_LAPLACE -fpermissive -I. -I/usr/local/admb/include iscam.cpp

*** LDFLAGS=" -m64" adlink iscam
g++ -m64 -L/usr/local/admb/lib iscam.o -ldflb2o -ladmod -ladt -lado -ldflb2o -ladmod -ladt -lado -o iscam

Done

cp iscam ../../dist/release
cp ./src/r-code/iSCAM.R dist/R
cp ./src/r-code/iSCAMViewTracker.txt dist/R
cp ./src/r-code/iSCAMWin.txt dist/R
cp ./src/r-code/read.admb.R dist/R
cp ./src/r-code/iScamLogo.gif dist/R
host250-84:iSCAM-trunk stevenmartell$
```

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At the command line:

- use `cd` to navigate to the `./iSCAM-trunk` directory
- Linux or Mac OSX: type `Make`
- Windows: see <http://gnuwin32.sourceforge.net/packages/make.htm>

Using the make file will compile the *iSCAM* source code and place copies of the code in the distribution directory ("dist")

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Examples in iSCAM-trunk/examples

- Demo
- Hake