

Meeting Times / Places

➤ Meetings

OLC 113:

(W: 15:40 - 16:40)

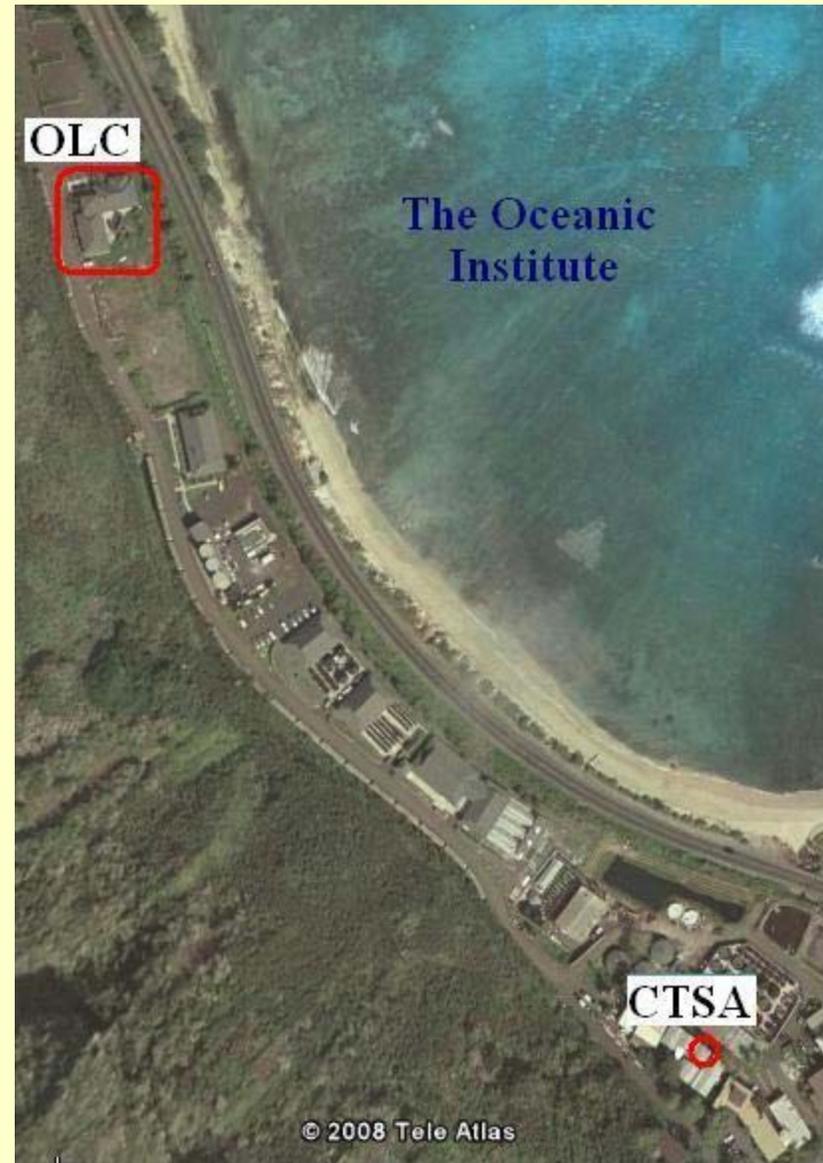
➤ Office Hours

CTSA 112:

(W & F, 12:00 - 13:30)

(W, 16:30 - 17:30)

... or by appointment



Web-Page

www.pelagicos.net

[/classes_current_topics_sp2013.htm](http://www.pelagicos.net/classes_current_topics_sp2013.htm)

COURSE ANNOUNCEMENT - Spring 2013
Current Topics in Marine Science



MARS 6910

This seminar will focus on the theory and practice of "Ecosystem-based Management" of living marine resources. Students will critically read and discuss examples from the ecological, marine conservation and policy literature, ranging from fisheries management case studies, anthropogenic disruptions of marine food webs, and the broader ecosystem effects of whaling.

Graduate / Undergraduate, 1 Credit

Course Web-Page

Last Updated January 15, 2013

Please report any problems here:
[khyrenbach \(at\) hpu \(dot\) edu](mailto:khyrenbach@hpu.edu)

Syllabus
(Last Updated: 1/18/13)

Schedule

March 27 - NO CLASS
May 8 - NO CLASS

Links

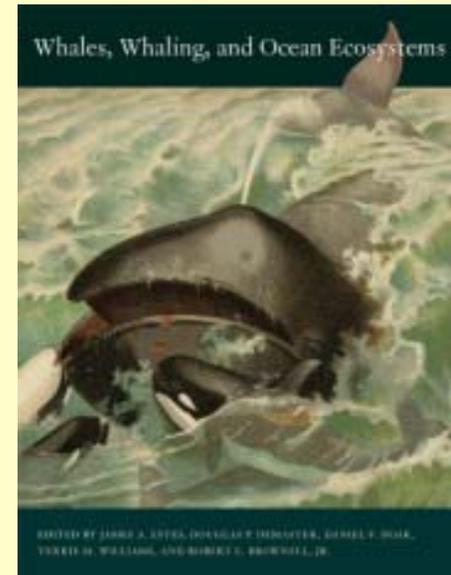
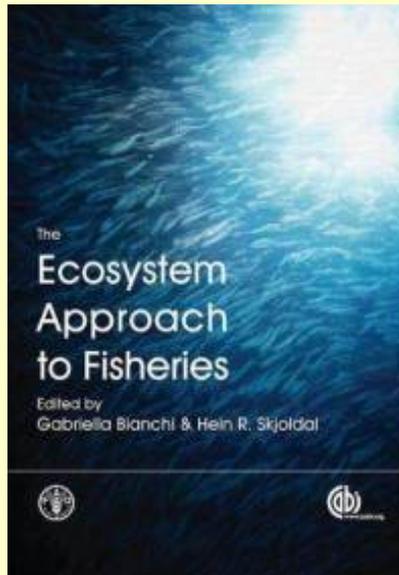
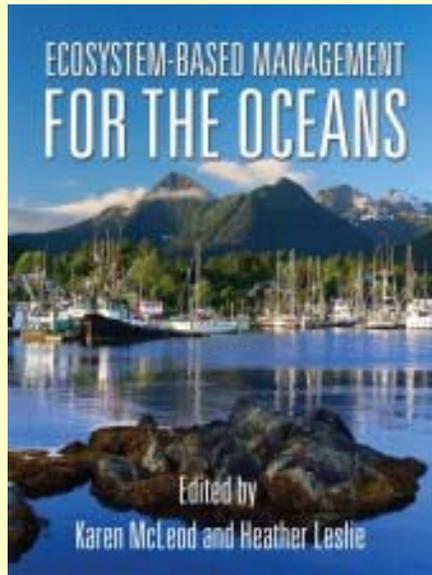
Instructor

<p>Dr. David Hyrenbach</p> <p>CTSA 112 Oceanic Institute</p>	<p>Office hours:</p> <p>W, F; 12:00 - 13:30 (CTSA 112, OI) W; 16:40 - 17:40 (OLC 113, OI) or by appointment</p>
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- Syllabus
- Presentations
- Readings
- E-books
- Links

What's the Plan ?

We will read and discuss the scientific literature



Discussion lead will stimulate discussion - using handouts, ppt, whiteboard - but will NOT recite paper to class

What's the Plan ?

Fourteen weeks:

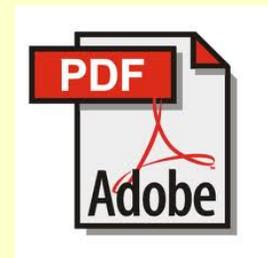
- One introductory week: Hyrenbach leads
- Eight weeks (before spring break): Students lead
- Four weeks (after spring break): Debates (2 each)
- Synthesis: Hyrenbach leads
- No meeting on Final's Week

What's the Plan ?

Eight weeks (before spring break): Students lead

Our Task - for next week: develop schedule

- look at e-books (links in web-site)
- send me ideas / readings (chapters)
- when agreed upon, download chapter pdf



Grades ?

- This class is Pass / Fail

- Grading (see syllabus):

 - Presentation 30% (2 discussion lead; 15 points)

 - Participation 70% (14 meetings; up to 5 points each)

Students with more than 5 absences, documented or undocumented, will be dropped from the course.

Focus of the Seminar



Ecosystem-Based Management



Home

Marine Science | Solutions for a Healthy Ocean

Ecosystem-Based Management

Overview
Both the Pew Oceans Commission and the U.S. Commission on Ocean Policy called on the U.S. to adopt ecosystem-based management (EBM) as the cornerstone of a new era of ocean policy. Human activities on the land, along the coasts, and in the oceans are changing ecosystems in unprecedented ways. Scientists understand a great deal about these changes and how ecosystems function, but there is a disconnect between this knowledge and current management practices. Ecosystem-based management focuses on addressing the cumulative effects of these actions so that we continue to enjoy healthy seafood, clean beaches, and other ocean benefits. COMPASS works with scientists, managers, and decision makers to help develop new tools to make ecosystem-based management a reality and ensure that science is better connected to—and informed by—management and policy.



Home

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Solutions for a Healthy Ocean

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NORTH PACIFIC FISHERY MANAGEMENT COUNCIL [Links](#)

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Current Issues

- * Crab Rationalization
- * Gulf of Alaska Groundfish Rationalization
- * Essential Fish Habitat
- * Halibut
- * Protected Species
- * Non-Target Species Management
- * Community Development Quota Program
- * Observer Program
- * HAPC
- * Bycatch Reduction - IRIU

Information on Ecosystem-Based management

- | | |
|---|---|
| Ecosystem Committee | Alaska Marine Ecosystem Forum |
| AI Fishery Ecosystem Plan | SSC Workshops on Ecosystem Modeling |
| --AI Ecosystem Team | |

Ecosystem-based management represents a new paradigm of management that builds on existing processes and emerging technology and research. Recent national-level ocean reports and the Bush Administration's Ocean Action Plan have highlighted the importance of pursuing an ecosystem approach to fisheries.

The Council already accounts for many ecosystem considerations in its management approach: environment and climate regimes, habitat that may be affected by fishing, non-fishing impacts on living marine resources, particularly fishery target species, bycatch management, endangered or threatened species or depleted marine mammal stocks, uncertainty and risk in fishery management decisions, and scientific needs. However, the shift to ecosystem-based fishery management is an ongoing process.

Search our site and NOAA Fisheries

Cooperative Forest Ecosystem Research

CFER

Overview
Research
Products
Resources
Search CFER

Ecosystem Management: Science at Work



"Ecosystem management is the integration of ecological, economic, and social principles to manage biological and physical systems in a manner safeguarding the long-term ecological sustainability, natural diversity, and productivity of the landscape. The primary goal of ecosystem management is to develop and implement management that conserves, restores, and maintains the ecological integrity, productivity, and biological diversity of public lands."

Bureau of Land Management. 1994. Ecosystem management in the BLM: From concept to commitment. Gov. Pub. BLM/SC/GI-94/005+1736.

CONTENTS

Research Needs
Ecosystem Management
Forest Ownership
Management Plans
Program Mission
Background

Ecosystem management is different from past land management practices that focused on a single resource such as timber, food production, biodiversity or recreation. Rather, ecosystem management is a cooperative approach that attempts to simultaneously manage for all interests (i.e., economic, social, biological) in a region or watershed.

Goals of the Seminar

- Define "Ecosystem-Based Management" (EBM)
- Review how EBM is being applied to manage marine living resources
- Evaluate whether EBM is being effective through critical review (and debate) of case studies published in literature

Group Activity

Define the term: **ecosystem**

Each person writes 5 terms defining this noun

Ecosystem - early definition

The term coined in 1930 by Roy Clapham to denote the **physical** and **biological** components of an environment considered in relation to each other as a unit.

Arthur Tansley later refined the term, describing it as:

"The whole system,... including not only the organism complex, but also the whole complex of physical factors forming what we call the environment". The spatial extent of ecosystems was later defined using the term "ecotope".

Tansley, A.G. 1935. The use and abuse of vegetational terms and concepts. *Ecology* 16: 284-307.

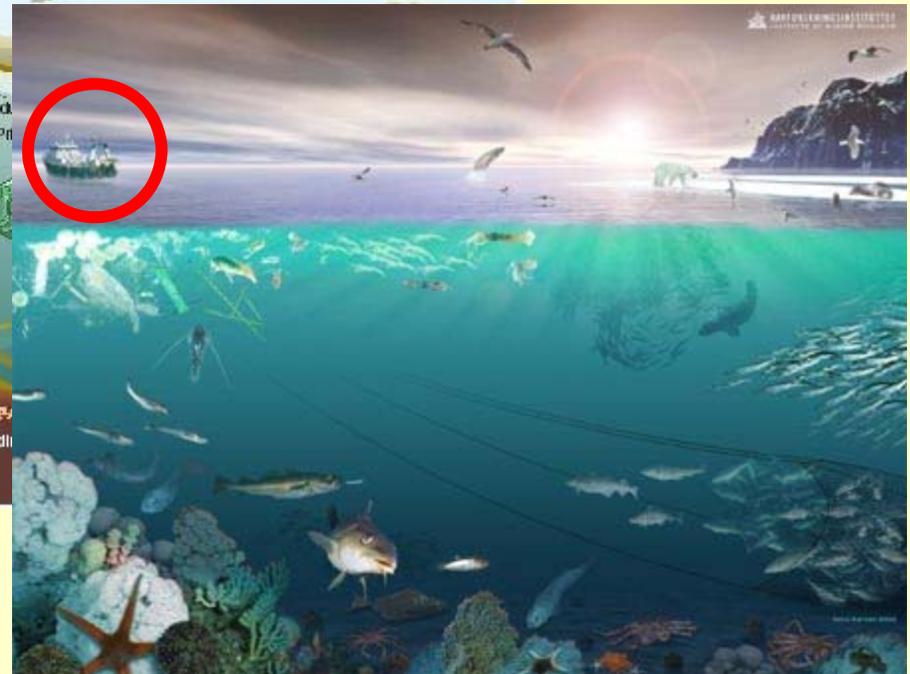
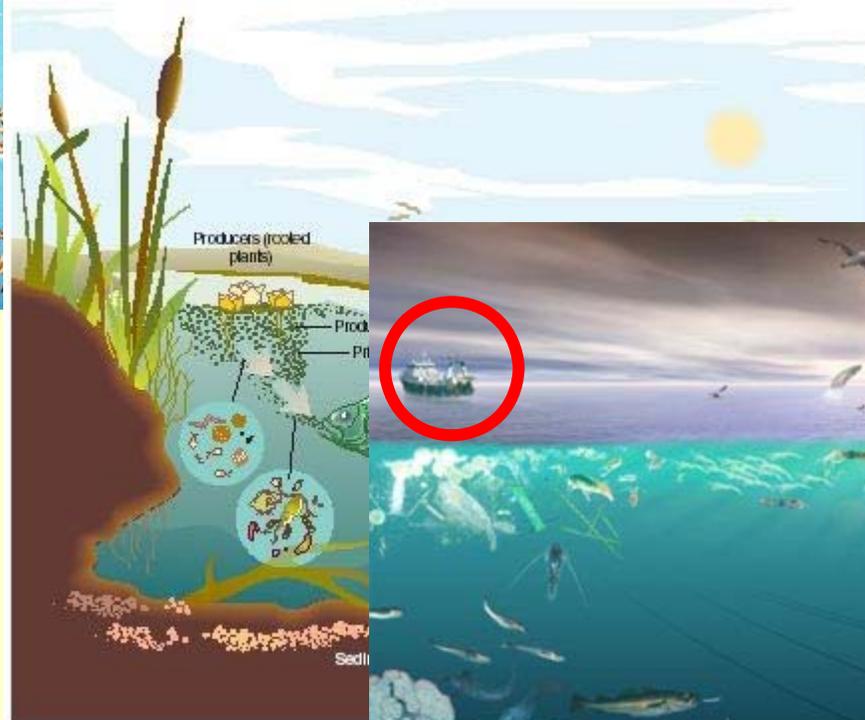
Ecosystem - refined definition

Eugene Odum, stated:

"Any unit that includes all of the organisms (ie: the "community") in a given area interacting with the physical environment so that a flow of energy leads to clearly defined trophic structure, biotic diversity, and material cycles (ie: exchange of materials between living and nonliving parts) within the system is an ecosystem."

Odum, E.P. 1971. Fundamentals of ecology, third edition, Saunders New York

Ecosystem - A Developing Definition



Group Activity

Define the term: **management**

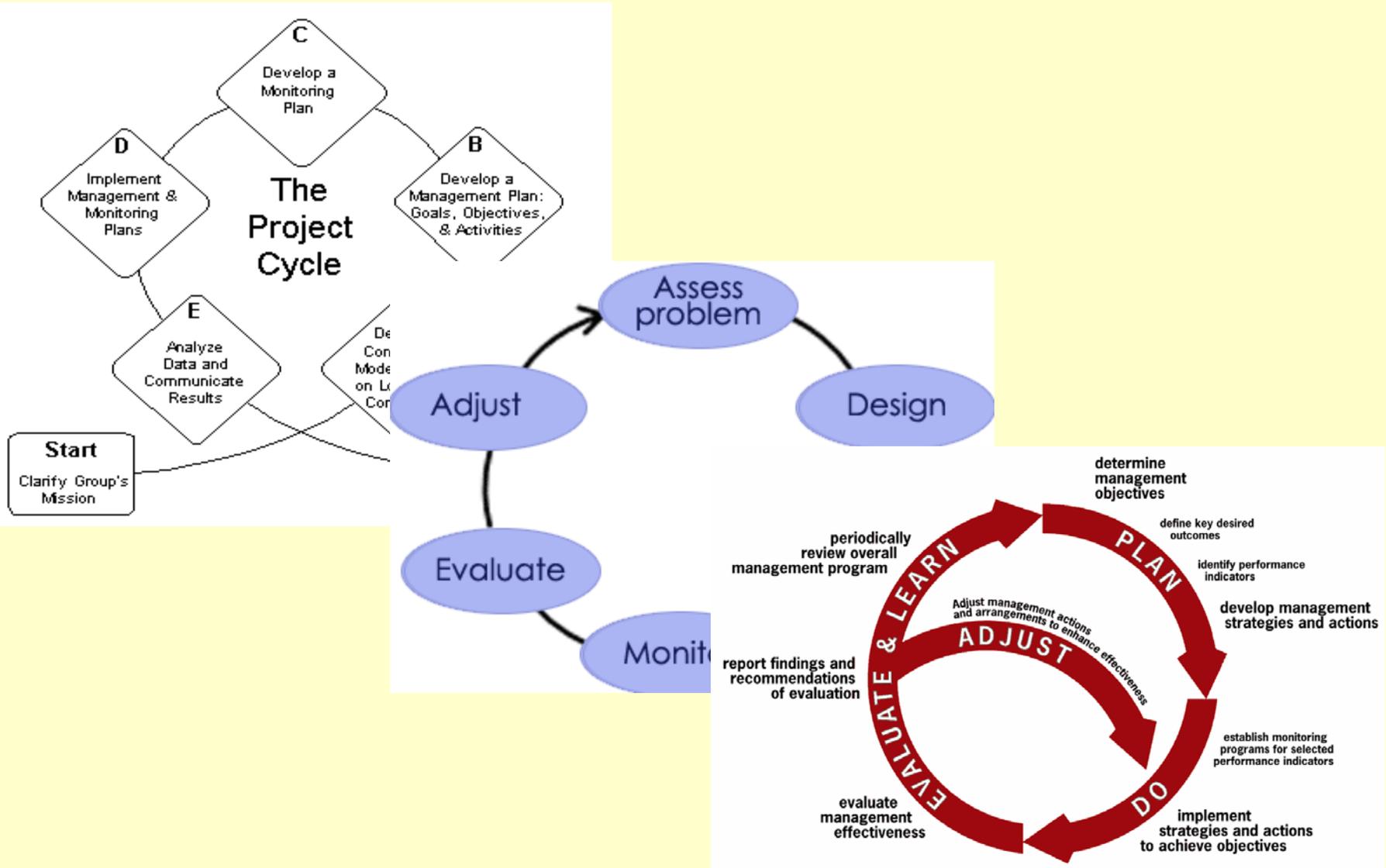
Each person writes 5 terms defining this noun

Management

The act of getting people and resources organized and coordinated to accomplish some desired goals

- Actions taken to reach one's intended goal
- Measuring a quantity on a regular basis
- Making and adjusting to some initial plan

Management - A developing definition



Today's Readings

These PDFs of scientific articles are for class use only.
Please do not distribute.

Date	Lead	Topic	Paper(s)
1 / 23	David Hyrenbach	EBM semantics	Willis A.J. 1997. Ruckelhouse et al. 2008.
1 / 30	David Hyrenbach	EBM Foundation	Grumbine R.E. 1994. Grumbine R.E. 1997.

Willis 1997

*Functional
Ecology* 1997
11, 268–271

Forum

The ecosystem: an evolving concept viewed historically

The now widely used term 'ecosystem' has had quite a long history and at various times interest has been focused on different aspects of its meaning. Not infrequently the term has been imprecisely or even incorrectly employed. This account aims to outline the changing emphasis of the term and seeks to promote its more exact use.

Ruckelshaus et al. 2008

Marine Ecosystem-based Management in Practice: Scientific and Governance Challenges

MARY RUCKELSHAUS, TERRIE KLINGER, NANCY KNOWLTON, AND DOUGLAS P. DEMASTER

Ecosystem-based management (EBM) in the ocean is a relatively new approach, and existing applications are evolving from more traditional management of portions of ecosystems. Because comprehensive examples of EBM in the marine environment do not yet exist, we first summarize EBM principles that emerge from the fisheries and marine social and ecological literature. We then apply those principles to four cases in which large parts of marine ecosystems are being managed, and ask how including additional components of an EBM approach might improve the prospects for those ecosystems. The case studies provide examples of how additional elements of EBM approaches, if applied, could improve ecosystem function. In particular, two promising next steps for applying EBM are to identify management objectives for the ecosystem, including natural and human goals, and to ensure that the governance structure matches with the scale over which ecosystem elements are measured and managed.

