

# Aquaculture, a Permaculture Perspective



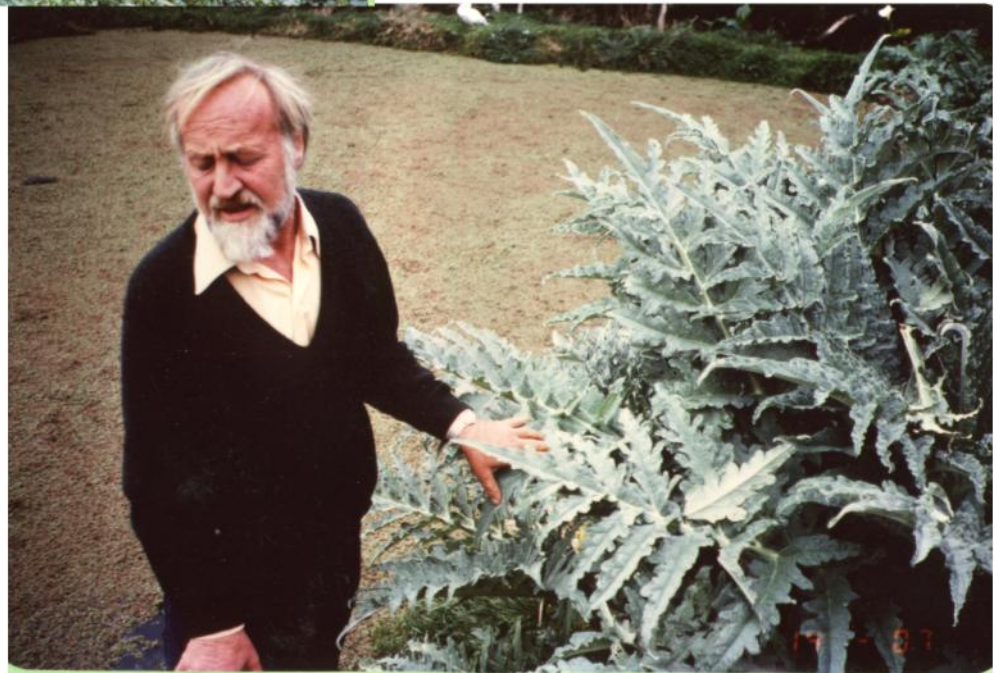
**With Bill Mollison**

MP3 Set Recorded at:  
Stanley, Tasmania, Sept. 1983

and

Perth, Western Australia,  
Dec. 1985

by Jeff Nugent



Bill Mollison netting Azolla from a pond at the course in Stanley, Tasmania. Bill Mollison showing students globe artichoke growing beside a pond with azolla growing on the pond. Pictures taken during The Swamp walk on this recording.

**SUSTAINABLE AGRICULTURE RESEARCH INSTITUTE PO Box 10,  
NANNUP, W. Australia 6275 tel. (09) 97561271**

[www.permacultureplants.net](http://www.permacultureplants.net)

All material is subject to copyright. February 2007

Welcome to the Aquaculture audio set with Bill Mollison. I hope you enjoy listening to this as much as I do.

Mostly this was taken from two different courses. I start with the 85 course because it was Bill's introduction to that group so he was starting from scratch with them. He had flown in the evening before and leapt straight into aquaculture. The next day (Saturday) he took a different group for Designing Your Own Backyard. He covered home ponds in that so I have included that small section.

Various parts of the 1983 Permaculture Design Course that I attended in 1983 in Stanley Tasmania is included also. There is some doubling of information but I doubt you will be bored.

As a tribute to modern technology I have been finally able to edit the walk through "The Swamp" – Bill's pet project in Stanley. This has not been released before. Nor has the resulting discussion in Bill's lounge room the following day. It clearly illustrates how Permaculture cuts across all disciplines.

Finally I have crammed Bill's sobering coverage of pH of water onto this CD. To fit it on to the CD I have had to severely compress it so the sound isn't great but the information is there. Because of the lesser quality, I have not included it in the 13 hours advertised on the cover. In fact there is 14 hours of listening here.

I welcome feedback on the sets I have on offer. Go to [www.permacultureplants.net](http://www.permacultureplants.net) to see what's new. Happy listening - Jeff

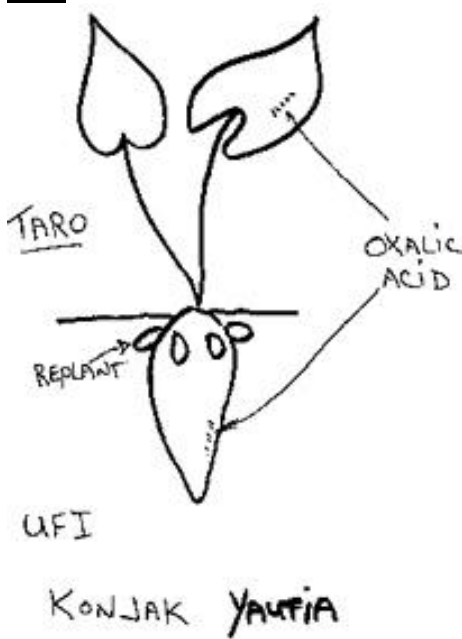
## December 1985 Murdoch University

### 01 Aquaculture 1a

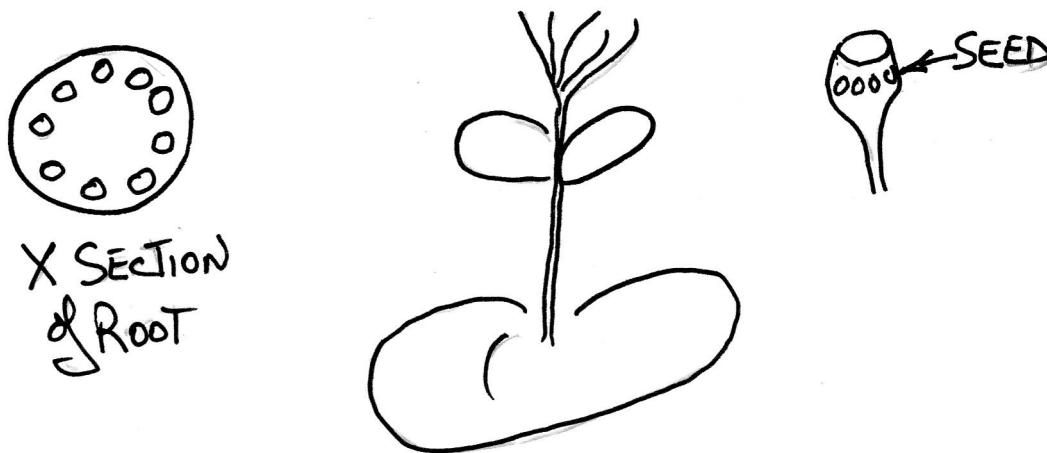
**Time: 3:30**

Use Types >	Staples	Root	Seed	Greens	Special Crops
Floating					
Emergent					
Submergent					

**4:40**



12:22

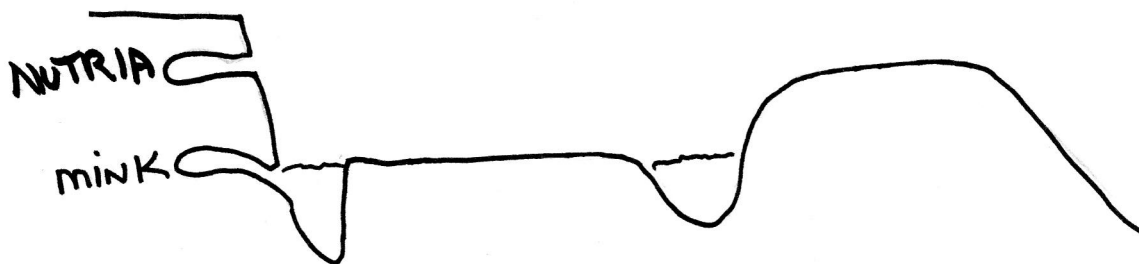


15:00 kang kong – *Ipomea aquatica*

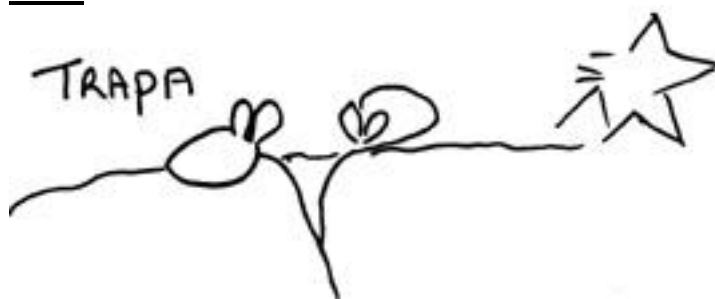
16:49 watercress

18:30 Orzya, *Zizania lacustris*

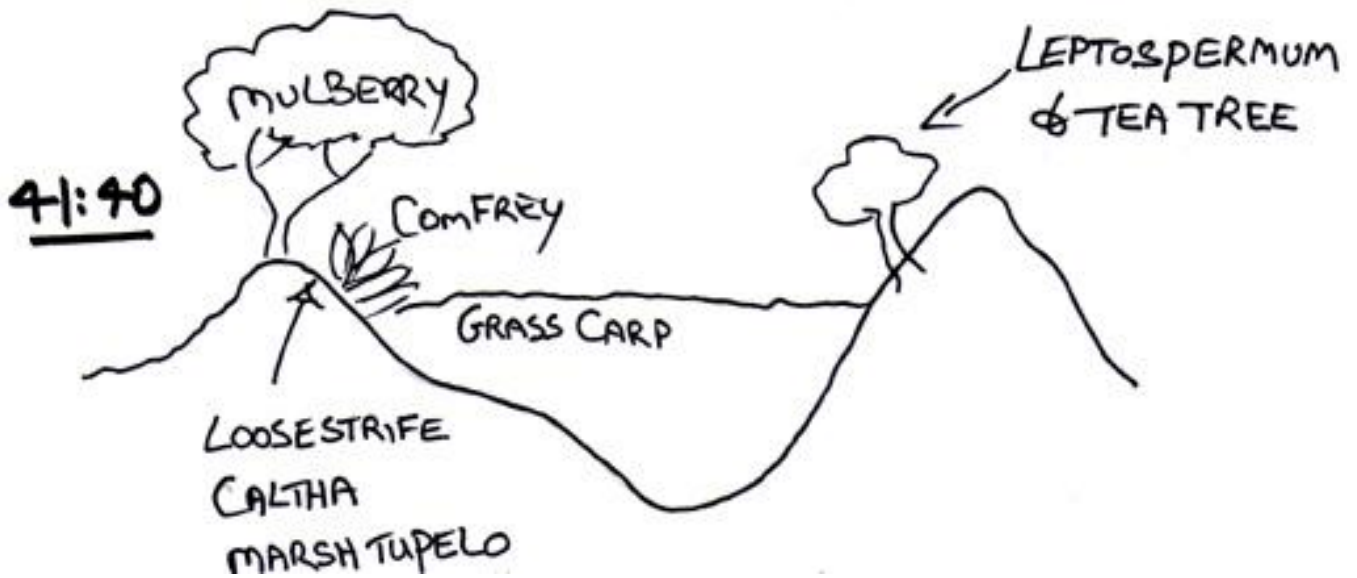
28:00



31:40

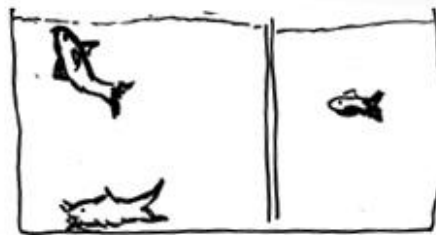


35:30 Chinese water chestnut *Eleocharis (esculenta, bulbifera)*



03 Aquaculture 1b

34:30

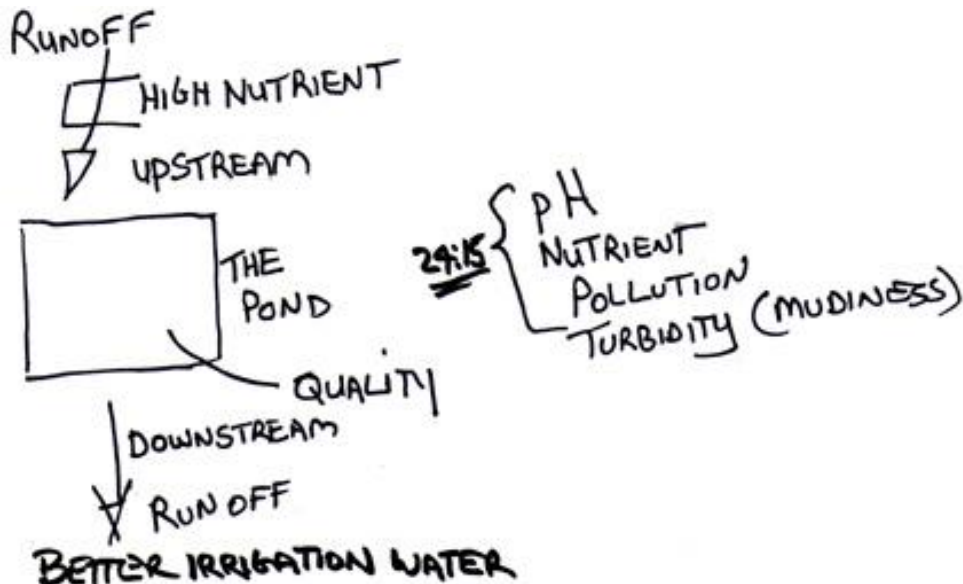


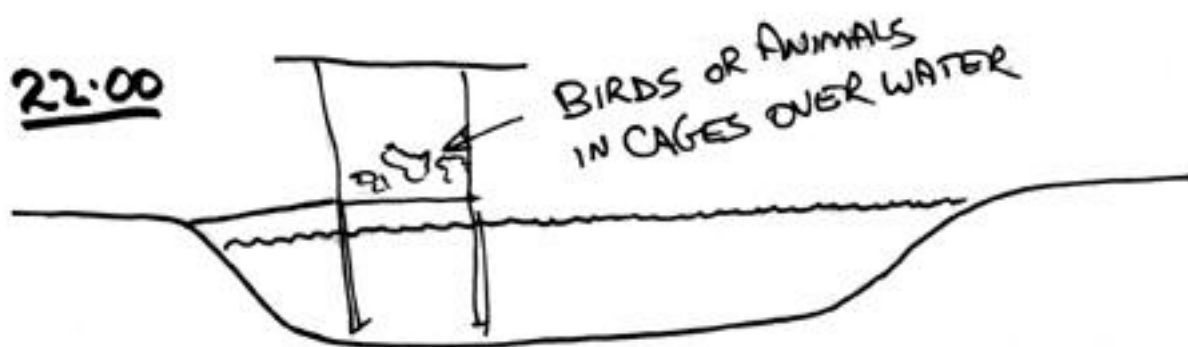
03 Aquaculture 2a

1:20



21:50 Factors in Yield



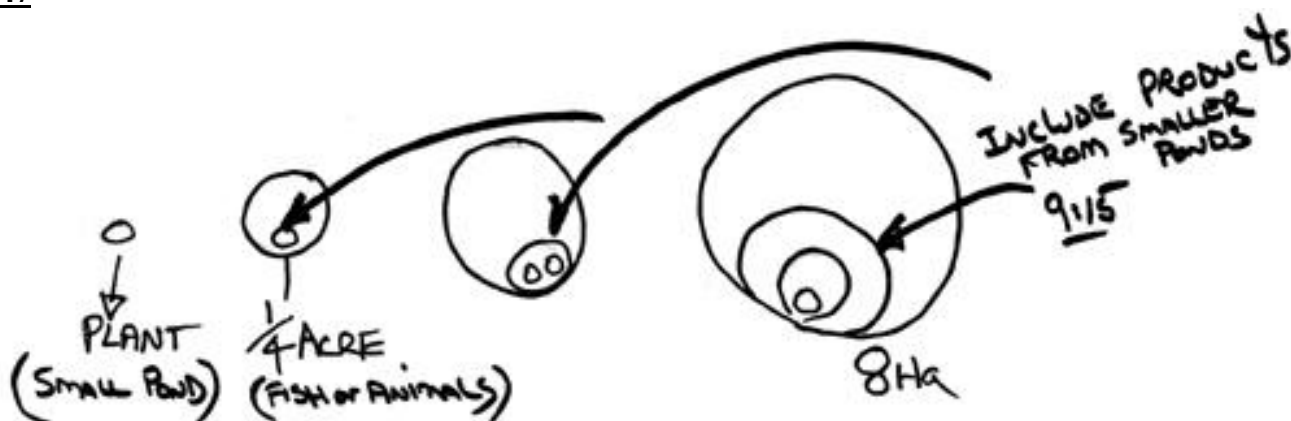


31:15

- ① NUTRIENTS
- ② SPECIES MIX
- ③ PROVISION OF FOOD FOR POND

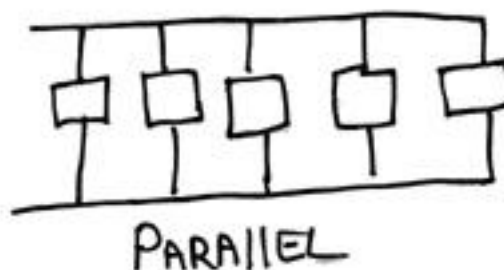
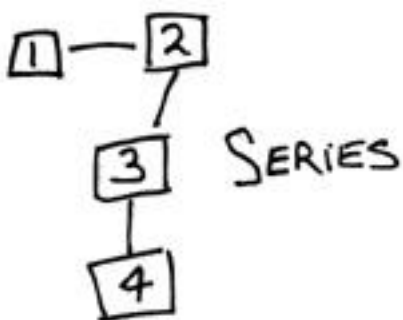
04 Aquaculture 2b

3:47

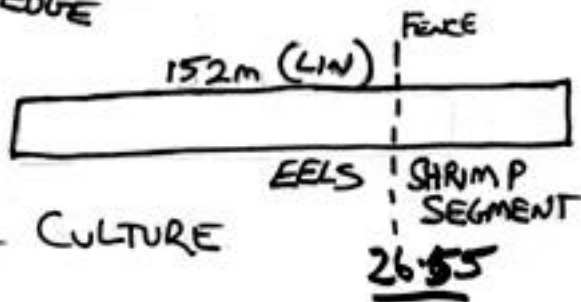
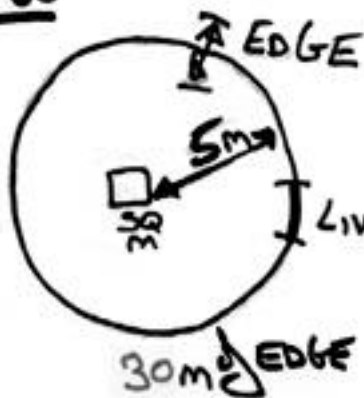


CONFIGURATION

19:05



23:00



26:00

CHANNEL CULTURE

28:00

CHWAMPA SYSTEM



29:03

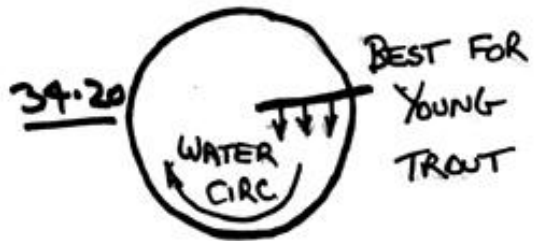
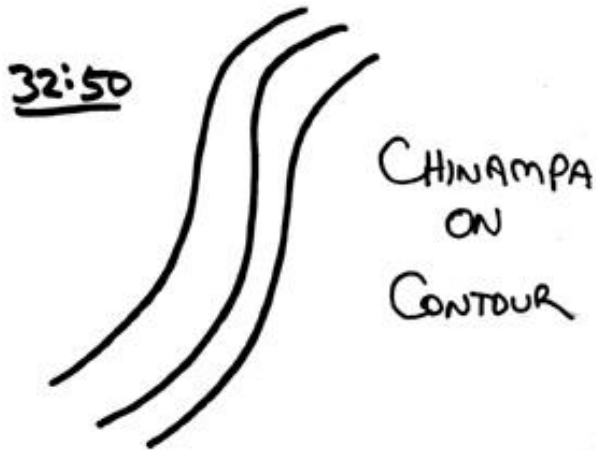


32:00

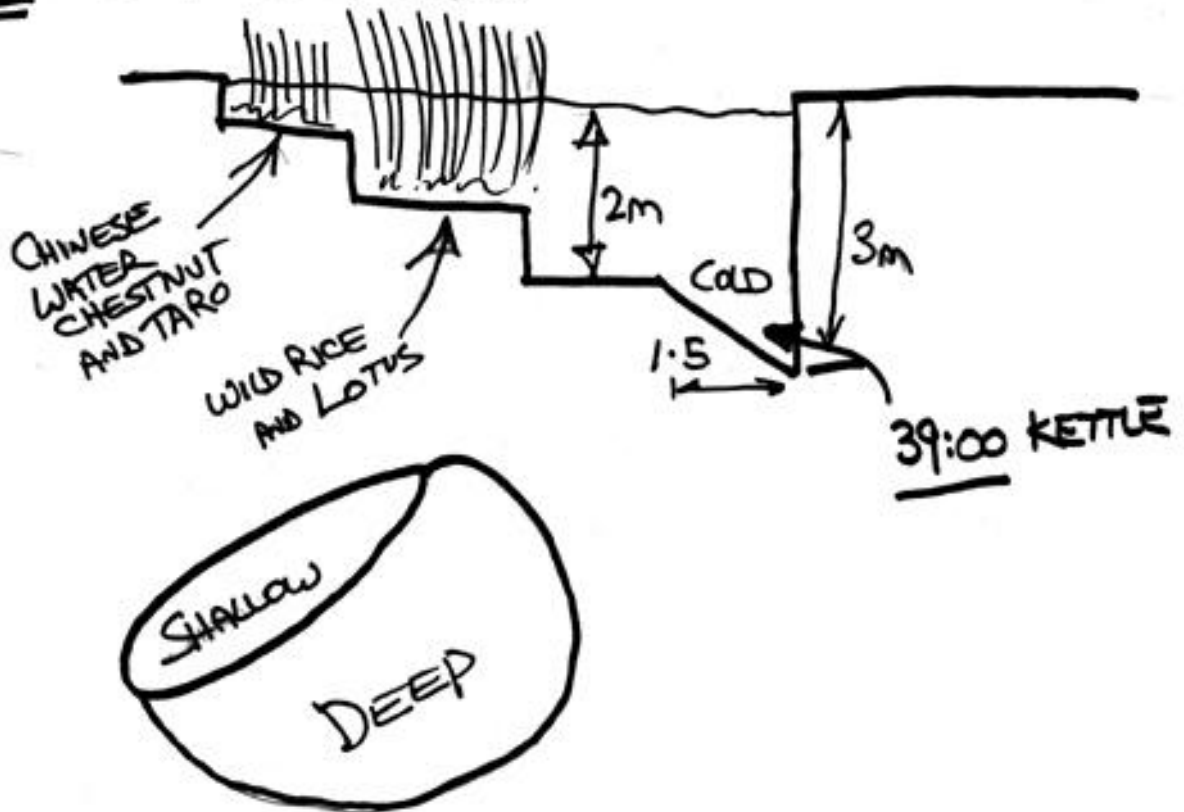


THINK BEFORE BUILDING  
A POND LIKE THIS



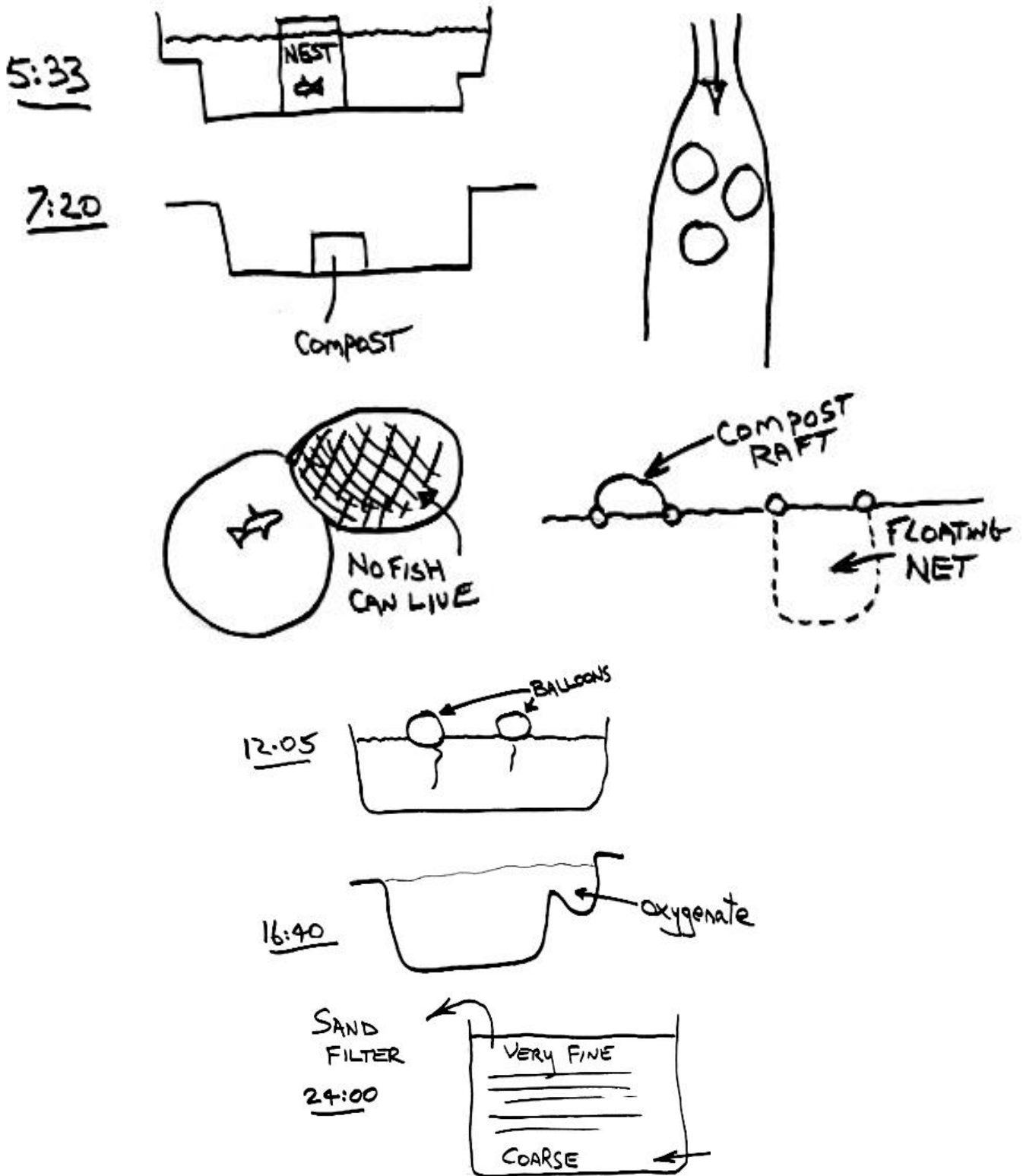


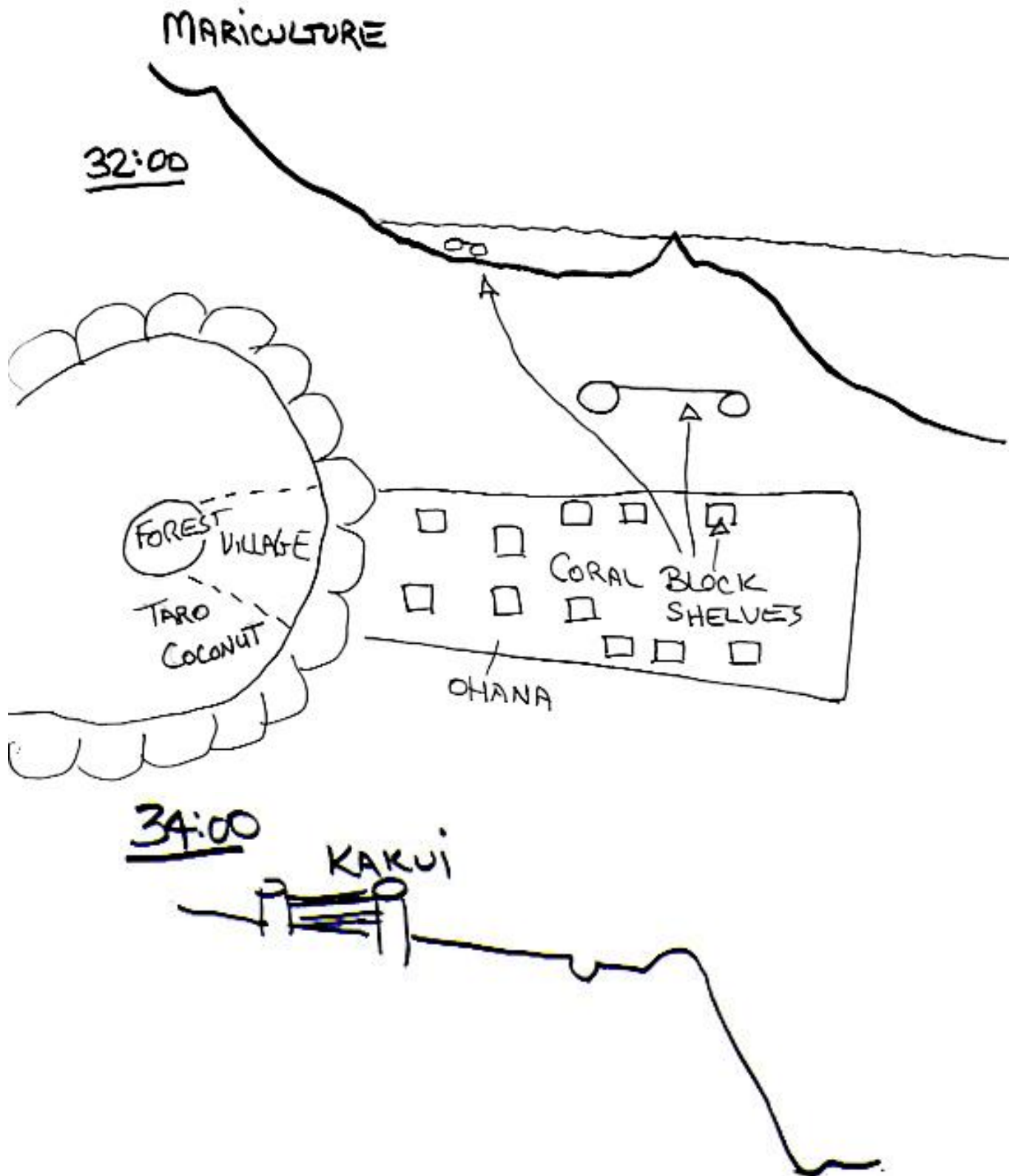
35:26 ORDERS OF DEPTH



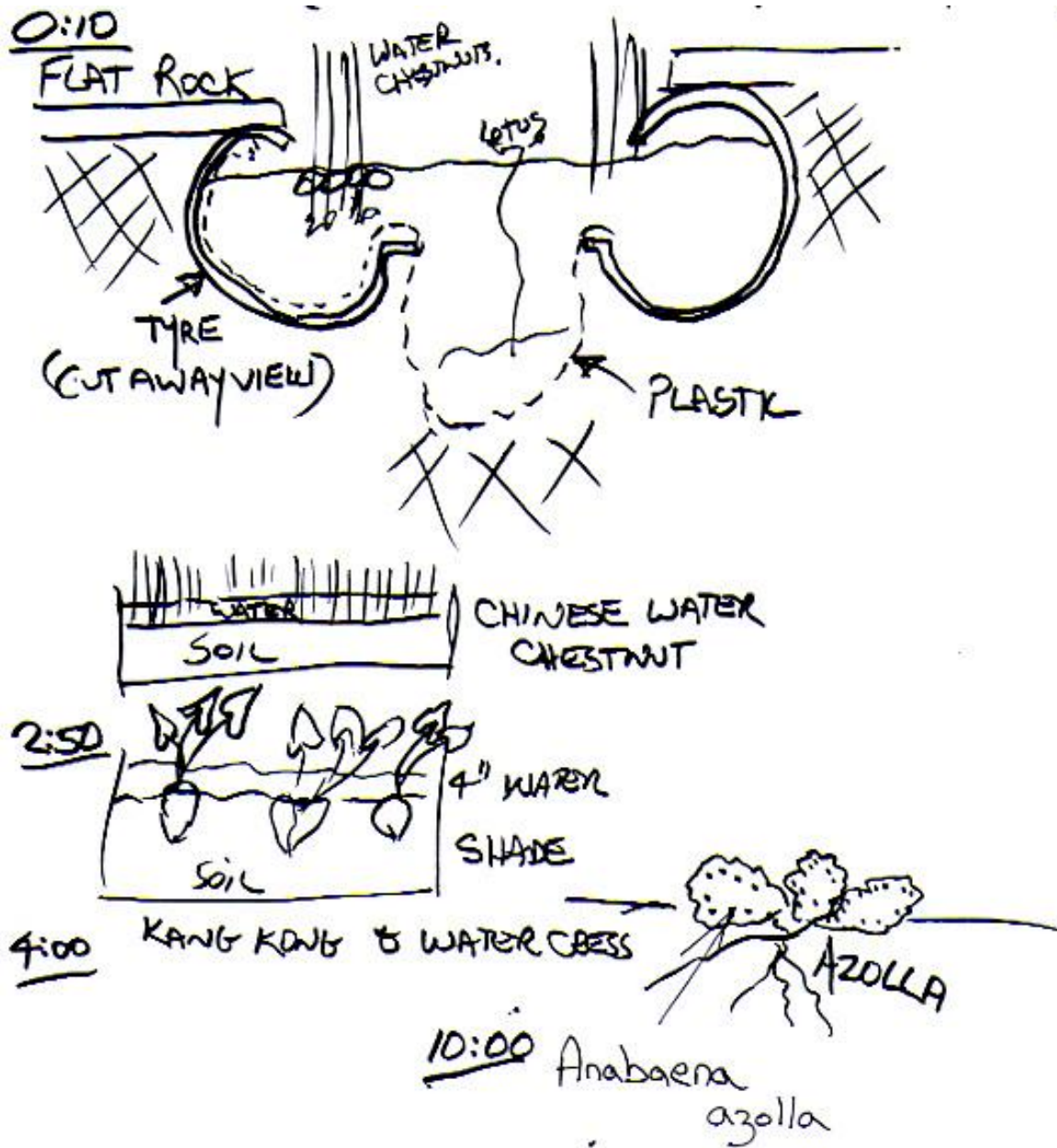
05 Aquaculture 3a

4:30 Annidation





06 Backyard Aquaculture Fremantle Education Centre, Perth, W. Australia Dec 1985



September 1983 Stanley, Tasmania

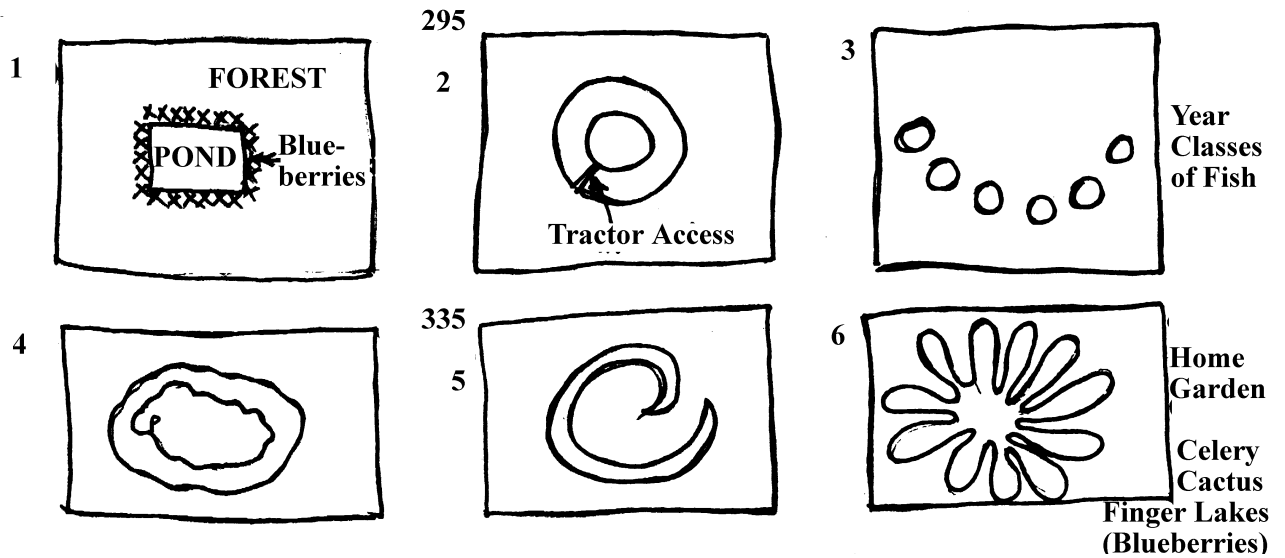
07 PDC 02B Trellis Over Water

08 PDC 03B Patterning The Edge

1:05 Herb garden in Permaculture 2

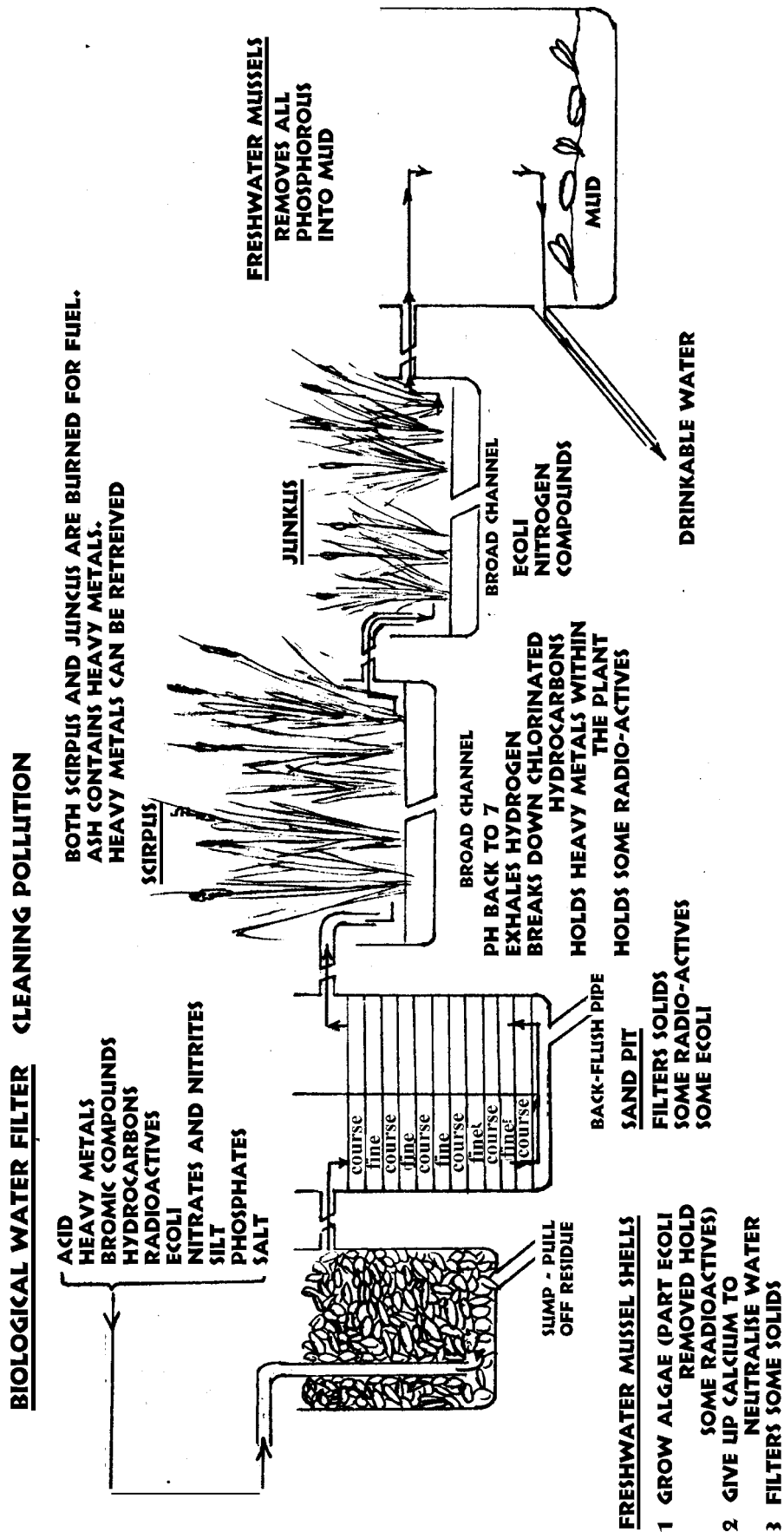


2:30 (260)

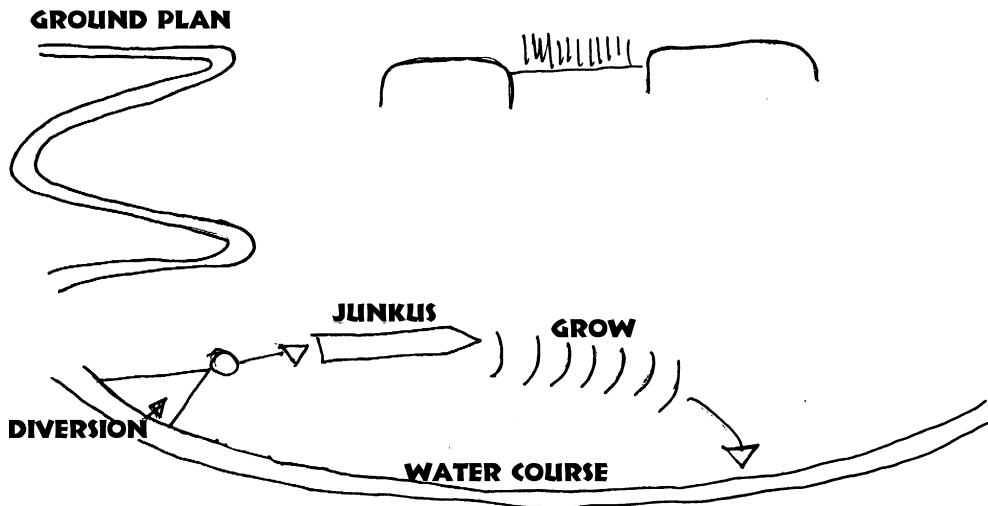


**10 Pdc 09a Biological Water Filter.**

**1:05 Cleaning pollution in water**

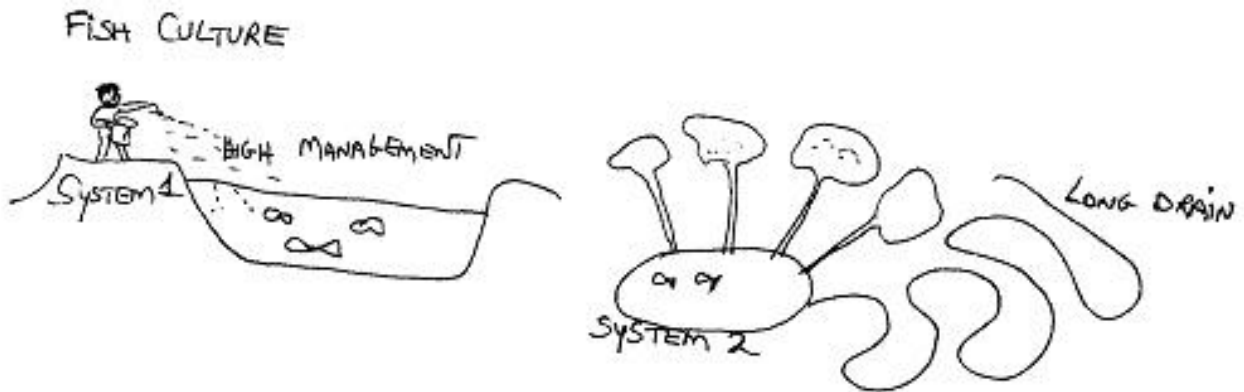


17:35

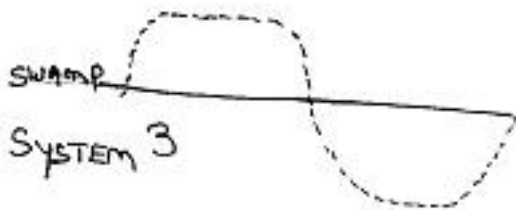


11 Pdc 13a.mp3

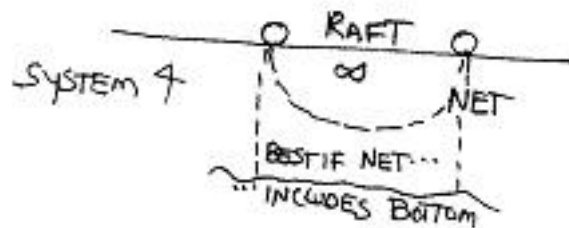
1:50



6:10



7:20



12 Pdc 13B.mp3

19:00

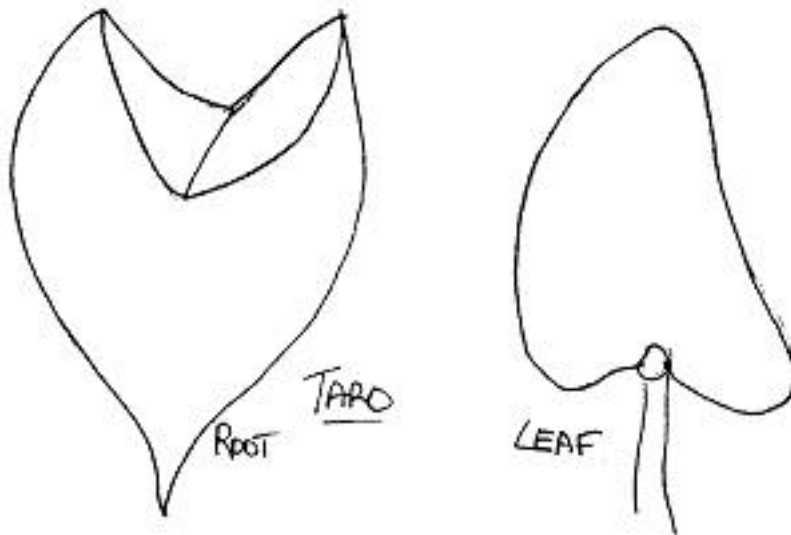


22:50

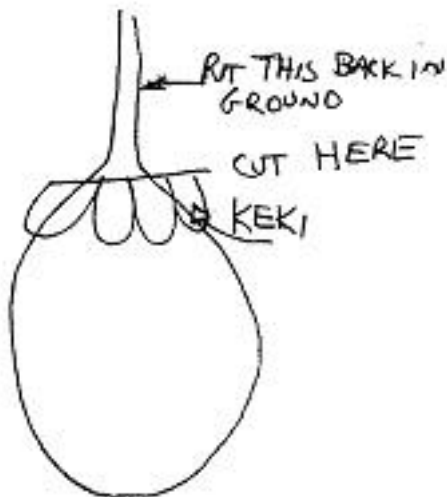


**13 Pdc 14a**

**18:25**

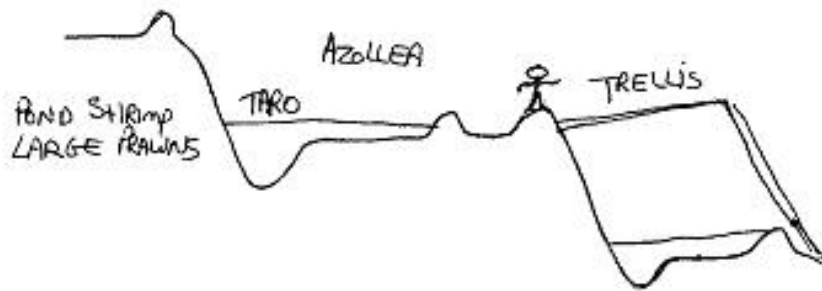


**26:30**



**29:15**





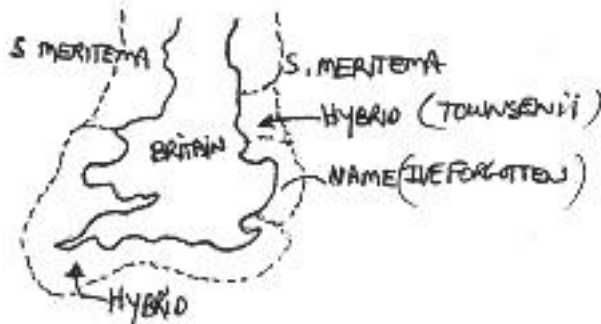
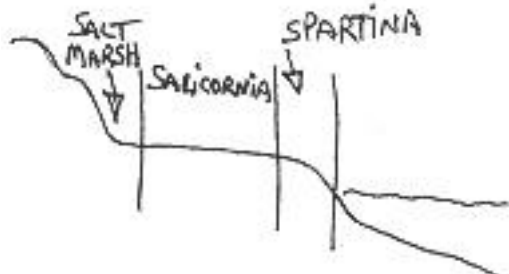
29:50

41:30



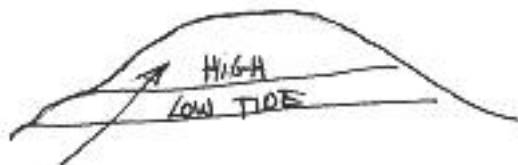
14 PDC 14B.

17:00



18:40

Zostera, Hetrozostera, Posidenea



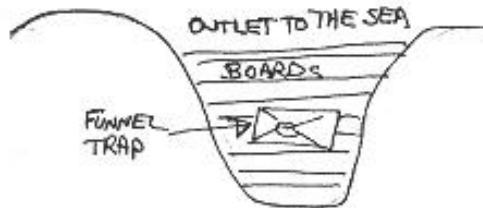
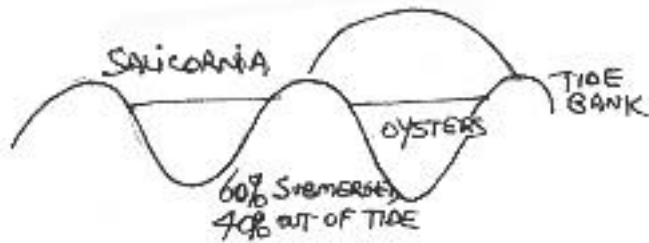
40:30



41:15

**15 Pdc 15a**

**4:30**

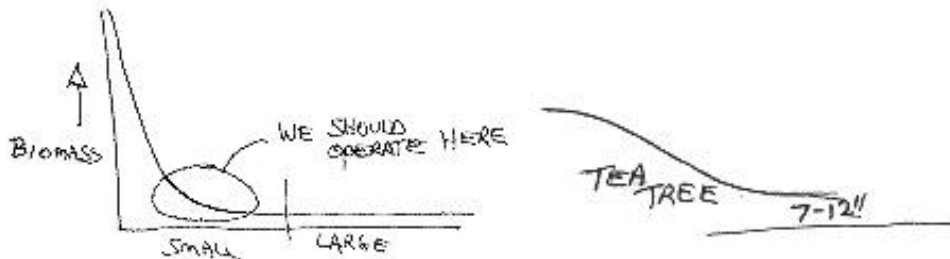


**7:20**

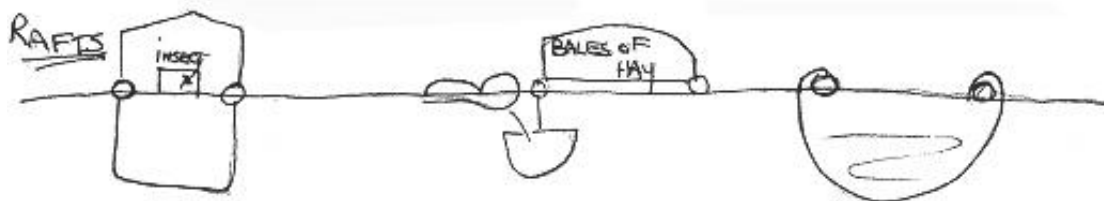
**9:15**



**15:09**



**21:30**



**36:00**

**37:50**

WILD RICE ZIZANIA AQUATICA  
WILDLIFE NURSERIES  
PO BOX 2729 OSHKOSH WI 54903 USA  
MINKS STUBS  
CRAYFISH BEAVER ETC

21. Water pH PDC 01a.mp3

070 Acid rain.

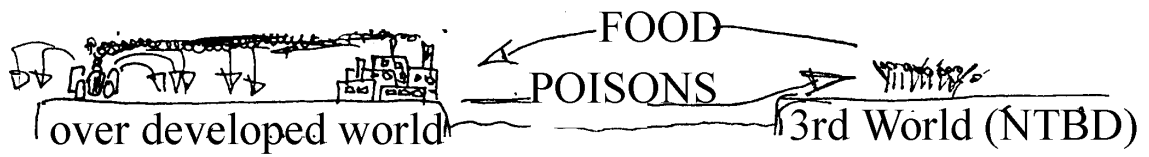
(10 <sup>6</sup> )1,000,000	<b>1-</b>	Concentrated sulphuric acid
X		1.6 snowfall in Vermont
more acid than 7		
(10 <sup>5</sup> )100,000	<b>2-</b>	Lime Juice
X		2.2
more acid than 7		2.8 Vinegar, average rainfall Berlin
(10 <sup>4</sup> )10,000	<b>3-</b>	
X		3.8 Average rainfall USA
more acid than 7		
(10 <sup>3</sup> )1,000	<b>4-</b>	Aluminium (in solution is plant poison) dissolves
X		4.5 Lead, Mercury, Cadmium, Selenium dissolve and unprotected cells die. (fish eggs, frogs, slugs, etc.)
more acid than 7		
(10 <sup>2</sup> )100 X	<b>5-</b>	Peat Bogs
more acid than 7		5.5 Rain (normally) - mostly carbonic acid
		5.8 male birth rate, anxiety, aggressiveness increase
(10 <sup>1</sup> )10	<b>6-</b>	
X		
more acid than 7		
<b>Neutral</b>	<b>7-</b>	Neutral - pure water
(10 <sup>1</sup> )10	<b>8-</b>	desert soils
X		8.5 sea water
more alkaline than 7		desert soils
(10 <sup>2</sup> )100	<b>9-</b>	
X		
more alkaline than 7		
(10 <sup>3</sup> )1,000	<b>10-</b>	Baking Soda
X		
more alkaline than 7		
(10 <sup>4</sup> )10,000	<b>11-</b>	Coastal lagoons
X		
more alkaline than 7		

Tape 1 Side A

- 352 The politics of acid rain
- 395 Atomic Power
- 580 Potable water

# 3 Mile Island

- 660 Cadmium in food from superphosphate



**END**