



# R & E Grant Application 13 Biennium

**Project #:  
13-073**

## *Adult Salmon Hoist System*

### ***Project Information***

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**R&E Project Request:** \$14,600.00  
**Match Funding:** \$4,542.91  
**Total Project:** \$19,142.91  
**Start Date:** 8/15/2014  
**End Date:** 6/30/2015  
**Project Email:** spmeshke@co.clatsop.or.us  
**Project Biennium:** 13 Biennium  
**Organization:** Clatsop County Fisheries

#### ***Fiscal Officer***

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**Name:** Aaron BeMiller  
**Address:** 800 Exchange , Ste 310  
 Astoria, OR 97103  
**Telephone:** 503-325-8565  
**Email:** abemiller@co.clatsop.or.us

### ***Applicant Information***

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**Name:** steve meshke  
**Address:** 2001 Marine Drive Room 253  
 Astoria, OR 97103  
**Telephone:** 503-325-6452  
**Telephone 2:** 503-741-0767  
**Fax:** 503-352-2753  
**Email:** spmeshke@co.clatsop.or.us

### ***Past Recommended or Completed Projects***

Number	Name	Status
03-002	Youngs Bay Net Pens/coho acclimation	Completed
07-045	South Fork Hatchery Upgrades	Completed
01-009	Youngs Bay Net Pens / Coho Acclimation	Completed
09-026	South Fork Improvements and Youngs Bay Piling	Completed
09-222	South Fork Klaskanine Hatchery Diversion Repairs	Completed
09-288	Youngs Bay Forklift Replacement	Completed
11-041	Adult Salmon Holding Pond	Completed

### ***Project Summary***

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**Activity Type:** Hatchery Maintenance - Non-ODFW

**Summary:** This project will consist of the fabrication and installation of a new adult salmon hoist/basket system. The new system will lift returning adult salmon from the holding pond area and place them into a water filled collection tank with a CO2 system for anesthetizing during spawning operations at our South Fork Hatchery site. This project will provide staff an improved and safer way to lift live adult salmon from the holding pond area during spawning operations.

**Objectives:** Currently adult salmon are lifted one fish at a time, by hand, out of the holding pond area and handed off to other staff during salmon spawning operations. The scope of this project will construct a new hoist/basket system that will lift the fish, 10 to 15 at a time, up and out of the water and dump them into a water filled collection tank fixed with a CO2 system that will anesthetize the fish so they may be sorted for spawning. The new system will provide a more ergonomic environment and alleviate the need for staff to lift all of the fish from the holding pond area by hand.

**Fishery Benefits:** In 2014, Clatsop County Fisheries releases from the South Fork Klaskanine Hatchery site will total 700,000 Select Area Bright Chinook (SABs) and 225,000 Coho. The Clatsop County Fisheries net pen sites will release 1,550,000 spring Chinook, 750,000 SABs and 2,610,000 Coho salmon. As part of the new Lower Columbia River Fisheries Reform the ODFW Klaskanine Hatchery will also

This project is NOT part of ODFW's 25 Year Angling Plan.

release 800,000 SAB's in 2014. The SAB broodstock is collected at both the ODFW Klaskanine Hatchery and our South Fork Hatchery site. The SAB's released from both of these project sites are south turning (i.e. entering the ocean they turn south) and as adults they contribute to the Northern California/Oregon ocean troll and recreational fisheries. Then upon returning both the Coho and Chinook salmon contribute to the Buoy 10 sport fishery, the Lower Columbia sport and commercial fishery and then finally to the Youngs Bay commercial gill net fishery. There is also a growing fall recreational fishery in upper tidewater of Youngs Bay focusing on the SAB's and Coho. On average, the SAFE commercial harvest contributes 56% of the spring Chinook, 24% of the fall Chinook, and 48% of the Coho to the total non-treaty Columbia River commercial landings (1993-2011). During 1994-2007 the annual SAB fall Chinook harvest data shows the fish being caught in the following areas; 23% ocean commercial, 55% SAFE, 13% Columbia River commercial, 6% Columbia River sport and only 2% escapement.

With the recent ODFW reform on the lower Columbia River and the passing of Senate Bill 830, ODFW has scheduled a new 500,000 increase in SAB broodstock production for the ODFW Klaskanine Hatchery in 2013-14. This broodstock production increase is planned to go 750,000 in a few years. This new production increase and broodstock collection will be completed at both the ODFW Klaskanine site and our South Fork Hatchery site to reach our production goals.

This new hoist system will help alleviate staff lifting injuries and make it easier to process the number of returning fish to this site, which have become a significant part of the non-treaty commercial fishery as well as a contribution to the sport fishery along the lower Columbia River and along the Oregon coast.

**Watershed Benefits:**

The improvements made to our adult salmon holding pond back in August 2012 by means of a grant from the ODFW R&E Program have dramatically improved our capability to properly hold and segregate the returning hatchery fish while efficiently passing wild salmon in a timely manner with minimal holding times. The new holding pond provides plenty of space so all the returning salmon have room to move in to the pond instead of staging outside of the fish ladder waiting for room. This helps to reduce possible hatchery fish straying or staying in the stream. This current project is focused on providing a tool to remove the returning fish by means of a hoist verses lifting them out of the holding pond area one by one by hand. The water collection tank/CO2 system will help to tire the fish quickly and allow staff to sort and process the fish in a timely manner while minimizing lifting hazards.

**Current Situation:**

Currently the collection of returning fish is carried out in the new adult salmon holding pond that was completed in the summer of 2013 with funds from the ODFW Restoration and Enhancement Board. This new holding pond area has made the collection of the returning fish much easier and more efficient. The new site allows us to sort and hold fish until they are ready for spawning as well as keep track of how many fish we have on hand during the spawning season. In 2013 we collected a total of 1248 fall Chinook and 345 coho.

During spawning operations the returning fish are crowded to one end of the pond by staff. One to two staff are wading in the pond area with the fish at the collection site. Staff in the water will net a few fish and place them into a net system that hangs on the edge of the pond wall at water level. This net is called the "tired-outer net". The fish are held here for a few moments here until they thrash around and "tire" themselves out so staff may pick them up and sort them into holding pens or pass them off to other staff standing outside of the pond. The staff located outside of the pond will take the fish passed to them for spawning or collection into totes for the stream enrichment program. During the spawning season the staff standing waist deep in water will pick up and sort every fish by hand that returns to the site. These fish will be lifted roughly two feet up to other staff or placed in holding pens located behind them. During a day of spawning operations we rotate staff that work in the water to help alleviate fatigue and to give them a rest from doing so much lifting.

This proposed project will fabricate and install a new hoist system that will alleviate staff from lifting the fish by hand out of the holding pond area. The fish will be crowded into a narrow area of the pond. The fish will then move through a trap door that leads into a hoisting basket. The basket will hold roughly 10 to 15 adult Chinook or coho salmon. The hoisting basket will be made from aluminum screen material with aluminum framing and is approximately 5 feet long by 3 feet wide. The trap door and basket door will be closed by hand and the 1/2-ton electric chain hoist will lift the basket up and out of the water. The 1/2-ton electric chain hoist will be hanging on a new hoist tower support system that is part of this grant package. We will also be hiring an electrician to install a new electrical circuit from our

generator shack to supply power to the hoist. When the basket reaches the top of its travel, a door system in the basket that faces the working area will open dumping the fish into a 6 foot by 3 foot aluminum collection tank that is 26 inches deep. The collection tank will be full of water. The collection tank will also have a bubbler air stone system in it that is hooked up to a CO2 tank. The CO2 level in the collection tank will cause the fish to tire quickly. The location and height of the collection tank will allow staff to quickly pick the fish up with minimal bending over, so they may be sorted for spawning, returned to holding pens, or moved to totes for disposal. The fish that are returned to the holding pen area quickly recover for the effects of being in the CO2/collection tank from observations and actual use we have noted at the Klaskanine Hatchery site. The new hoist system will increase efficiency and the time that it takes to sort through fish, reduce the amount of staff needed for the operation, and most of all alleviate the amount of lifting required of staff.

**Alternatives:** There was no other alternative other than to continue our current spawning procedures that are labor intensive and require staff to lift each fish from the holding pond area for spawning and sorting.

**Designer:** Clatsop County staff has designed the salmon hoist/basket/tank/CO2 system using concepts and dimensions from other local ODFW hatchery facilities.

**Methods:** This project will be advertised and contracted by following the County's procurement and contracting guidelines. The winning contractor will be contracted using the County's standard Personal Services Contract form. The final hoist tower/basket/collection tank and CO2 system installation and set-up at the hatchery will be performed by Clatsop County Staff.

Clatsop County Fisheries has researched the permitting process through the County's Planning Department and we will only be required to obtain an electrical permit for the project. The permit can easily be applied for and obtained prior to commencement of work. The project will be completed during the summer months while the pond area is dry and no fish are present.

**Inspector:** Clatsop County Fisheries Manager Steve Meshke and County Staff will oversee and monitor the construction process.

**Funding Elements:** The R&E grant funds will be used for the following procurement/contract items in this project:

1. Fabrication contract for the adult salmon hoist, basket, and collection tank
2. Purchase of one electric 1/2-ton chain hoist
3. Contract for the electrician to conduct electrical circuit install and hook up for the 1-ton electric chain fall hoist
4. Purchase of air stone and associated piping supplies needed for the CO2 system set up

Clatsop County will contribute \$2,000 cash match towards the procurement/contract items.

Clatsop County staff will provide an in-kind match for administrative work involved with the contracting process and for the inspections during the construction period, as well as the staff time involved for the installation of the final product once completed by the contractor.

Clatsop County Fisheries has already provided an in-kind match with the staff time for the design and research phase of the project.

This project will be completed in August through mid-September in the summer of 2014.

Partners: No  
 Existing Plan: No  
 Affected Contacted: No  
 Affected Supportive: No

**Project Schedule/Participants/Funding**

Activity	Date	Participants
We will hire a local contractor to fabricate the hoist tower, basket and collection tank.	8/5/2014	contractor
Hire an electrical contractor to wire in new circuit.	9/1/2014	contractor
County staff to complete the final product install at hatchery site.	9/15/2014	Clatsop County Fisheries

**Affected Species:** Chinook Salmon  
 Chum Salmon  
 Coho Salmon  
 Cutthroat trout  
 Steelhead

**Project Permits**

Name	Issued By	Secured?	Date Secured	Date Expected
County electrical permit	Clatsop County	No	1/1/0001	8/1/2014

**Project Monitoring**

Organization	Address	Activity	Frequency
Clatsop County Fisheries	2001 Marine Drive Ste 253 Astoria, OR 97103	Contract fabrication inspections	As required

**Project Maintenance**

Organization	Address	Activity	Frequency
Clatsop County Fisheries	2001 Marine Drive Ste 253 Astoria, OR 97103	Maintenance to maintain the hoist assembly	As required

**Project Match Funding**

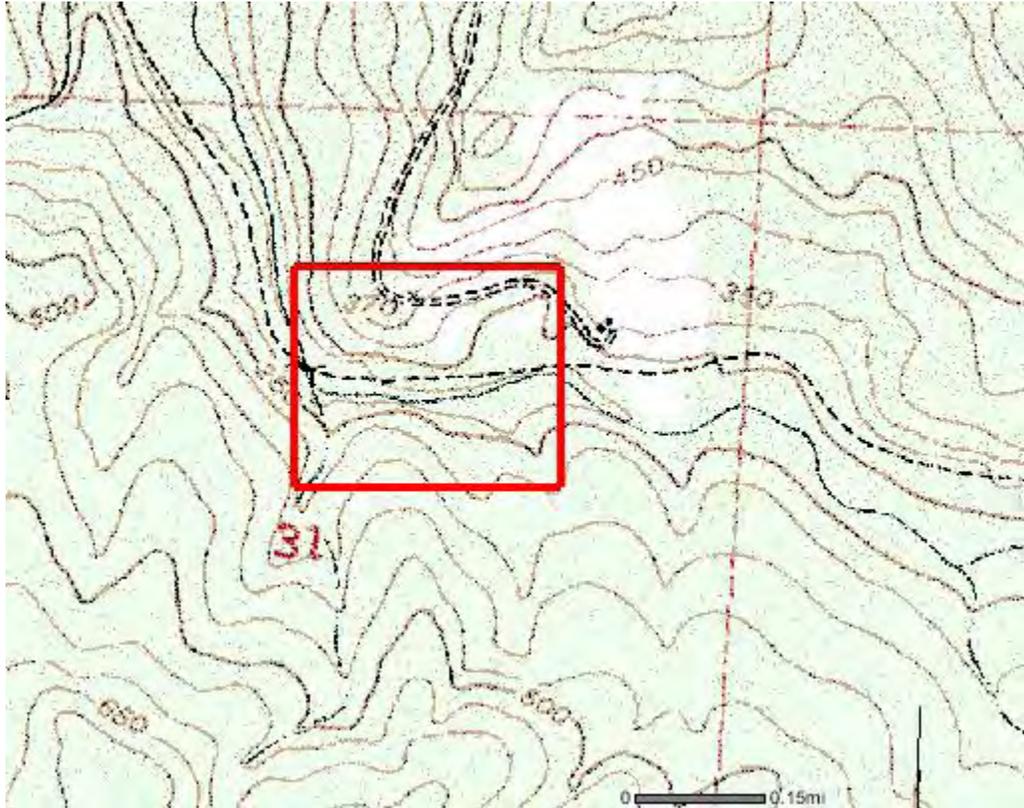
Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$14,600.00	\$0.00	\$0.00	Funds for fabrication contracts and supplies	\$14,600.00	No	No	
Clatsop County Fisheries	\$2,000.00	\$0.00	\$0.00	Cash match for fabrication contract and supplies	\$2,000.00	Yes	No	
Clatsop County Fisheries	\$0.00	\$2,542.00	\$0.00	labor for installation of hoist system and grant administration	\$2,542.00	Yes	No	
				Total Match Funding:	\$19,142.00			

**Project Budget**

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Grant administratin	Administration	1	\$685.62	\$0.00	\$685.62	\$685.62
Electrical contract for power hook-up	Contracted Services	1	\$1,000.00	\$1,000.00	\$0.00	\$1,000.00
Fabrication contract for hoist system	Contracted Services	1	\$13,500.00	\$11,500.00	\$2,000.00	\$13,500.00
Staff time for installtion of hoist	Personnel	1	\$1,857.29	\$0.00	\$1,857.29	\$1,857.29
1/2-ton electric chain hoist	Supplies/Materials /Services	1	\$2,100.00	\$2,100.00	\$0.00	\$2,100.00
					Total Budget:	\$19,142.91

## ***Project Map***

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## ***Additional Files***

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Click a link to view that particular file.

[Conceptual Drawings](#)

[Project site photos](#)

[Signature Authorization form](#)

## Signature Authorization Page

I hereby make an application for financial assistance under the terms and conditions of the R&E Program as described in my project application.

I understand that if my project is approved for funding, the following will apply:

- All project sponsors must sign a grant agreement containing the terms and conditions on which funding will be released.
- Project expenses which occur before the grant agreement is signed or after the expiration date will not be paid by the R&E Program.
- Copies of all necessary permits must be submitted to the R&E Program.
- Project sponsors must certify compliance with local, state, and federal regulations and laws.
- Landowner, monitoring and maintenance agreements must be submitted to the R&E Program.
- Regular progress reports may be required, and at the end of each project a Completion Report must be submitted.
- Educational products resulting from projects are public domain.
- All information submitted to either party under this application is subject to the federal Freedom of Information Act.

Project Title: Adult Salmon Hoist System

Applicant: Clatsop County Fisheries

Date: 3-31-14

Fiscal Officer: 

Date: 4/1/14



# Clatsop County

Public Works  
1100 Olney Avenue  
Astoria, Oregon 97103  
www.co.clatsop.or.us

Phone (503) 325-8631  
Fax (503) 325-9312

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April 11, 2014

Kevin Herkamp  
Ryan McCormick  
Oregon Department of Fish and Wildlife  
4034 Fairview Industrial Drive SE  
Salem, OR 97302

RE: R&E Grant request for Adult Salmon Hoist Project

Dear Mr. Herkamp and Mr. McCormick,

Clatsop County Fisheries has submitted a grant request for the 2013-15 Biennium Cycle 5 R&E Grant program for the Adult Salmon Hoist project at the South Fork Klaskanine Hatchery site. The Clatsop County Fisheries Department is a sub-department of the Clatsop County Public Works Department. Steve Meshke asked that I review the proposed plans and specifications for the Adult Salmon Hoist project.

I have reviewed the proposed plan for the hoist project and deem the design adequate to serve the purpose for hoisting fish to create a more efficient work flow process for the fish hatchery. The hoist system with welded connections and additional cross braced members will more than adequately provide a safe and well supported hoist system for the lifting of fish and associated components.

Feel free to contact Steve Meshke or me with any questions or comments.

Sincerely,

A black rectangular redaction box covering the signature of Michael Summers.

Michael Summers, PE  
Clatsop County Engineer

cc. Steve Meshke – Clatsop County Fisheries

# Clatsop County Fisheries Adult Salmon Hoist Project Site



This will be the location on the new salmon hoist.

These two photos show the adult salmon holding pond project site that was completed with an R&E grant in 2012. The top photo is looking over the pond area where newly arriving fish are held in the pond area.

The lower photo shows the area where fish are crowded and then sorted for spawning or moved into the holding pens. In the foreground of the lower photo is where the new salmon hoist proposed in this project will be placed (where the ODFW R&E project sign is)



This photo is looking at the spawning area. You can see the totes where fish are sorted. The person in this photo is conducting the coded wire tag recovery and scale collection/sampling. Under the covered area is the spawning rack where female fish are placed before the eggs are taken from them.

These two pictures show the staff spawning male fish and sorting fish to totes. In the background of the upper photo along the top of the blue tote you can see two of the staff members heads. They are sorting the fish and handing them up to the staff for spawning.





This photo shows the two staff taking a break from lifting the fish out of the tired-out net. As you see staff has quite the lift to get the fish up and out to staff on the concrete slab area. With the addition of the salmon hoist the staff will not have to stand in the water and lift the fish up to the concrete slab area.

The person standing in the background behind the tote is the Hatchery Host from Klaskanine Hatchery. The Hatchery Host from Klaskanine helps out each year with spawning operations at both



The photo to the right is an older photo showing Warrenton High School students helping out with spawning activities in our old spawning area. You can tell how much the fish thrash around in the tired-out net. It takes a bit to grab and hold onto a 20 to 25 pond fish. The new collection/CO2 system will replace this process.

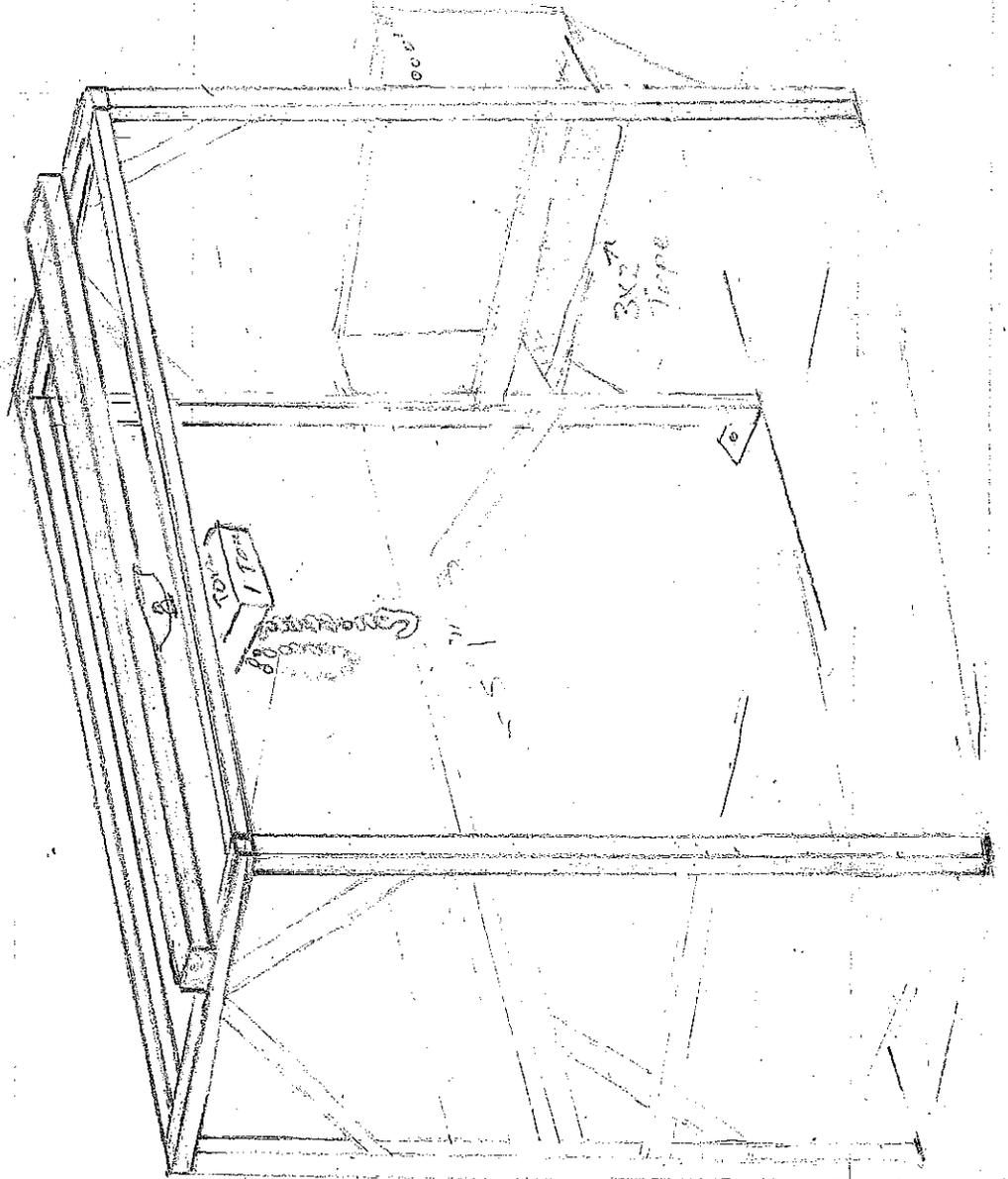
The lower photo shows staff dipping the net and catching fish for the tired-out net.



Clatsop County Fisheries

Conceptual Drawing

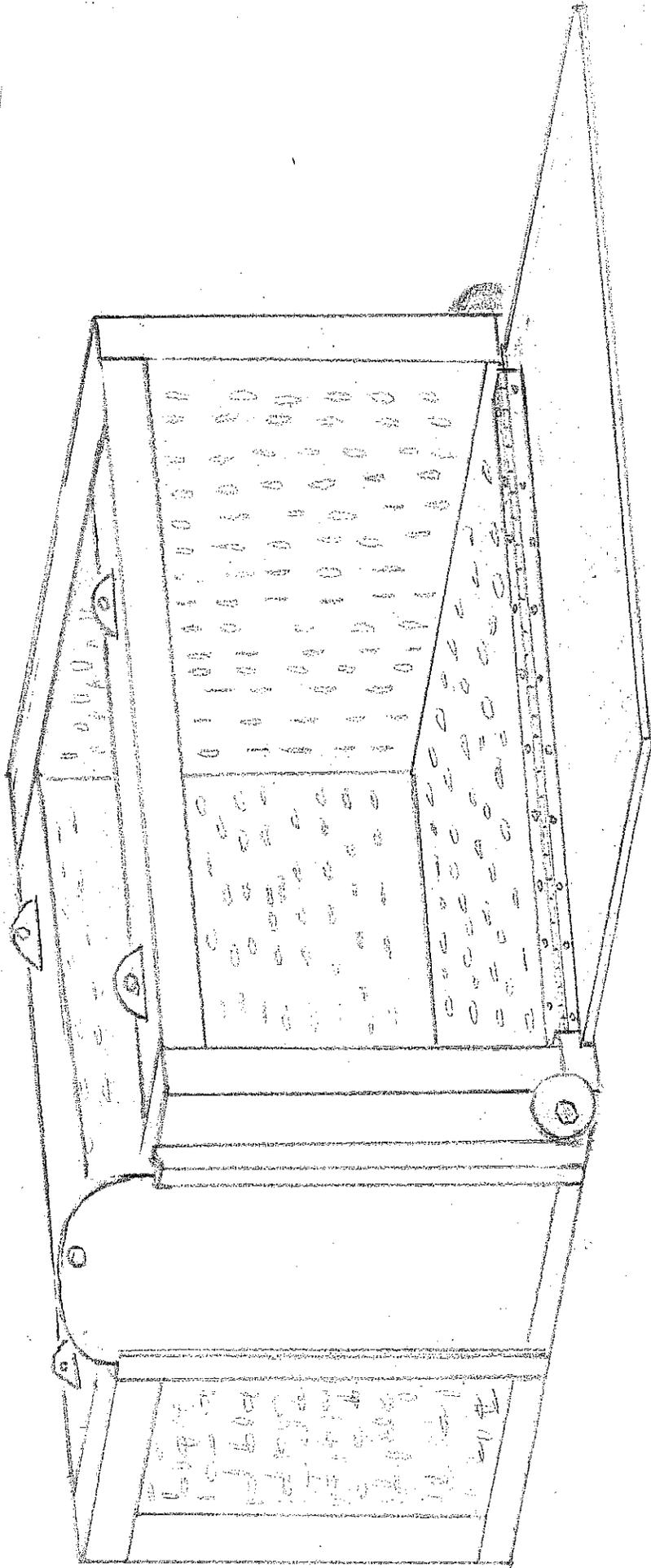
Hoist carriage assembly



Clatsop County Fisheries

Conceptual Drawing

Basket assembly



# Clatsop County Fisheries

## Conceptual Drawing

### Collection/CO2 immersion tank

