C3c Pelagic Trawl Gear Definition Analysis

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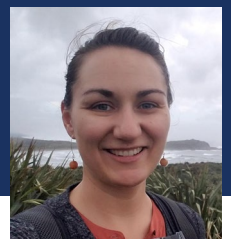
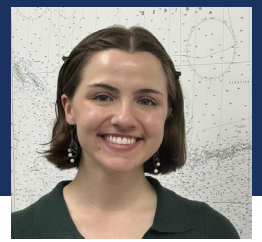
This action is intended to update the definition of pelagic trawl gear and is separate from the pelagic trawl gear innovation discussion paper and future efforts on the performance standard.





This action relates to other ongoing actions

Section 1.2 & 1.3 pg 9

C3c (this action): Pelagic trawl gear definition

Update to the regulatory definition to allow commonly used components in codend and bycatch excluder devices and allow instruments.

C3a: Pelagic trawl gear research

Research is ongoing to catalog pelagic trawl gear configurations and methods to measure pelagic trawl gear ground clearance and contact with the seafloor.

An update on these research efforts will be presented as part of this agenda item.

C3b: Pelagic trawl gear innovation

Discussion paper will be presented as part of this agenda item to inform options to incentive pelagic gear innovation with the objectives to:

- minimize bycatch
- minimize impacts to benthic habitats and unobserved fishing mortality
- improve or maintain fishing efficiency
- provide flexibility to adopt new technologies as they are developed

Future work: Performance Standard

As stated in the Feb 2024 motion, the Council intends to review options to change the pelagic trawl gear performance standard following this work.

Outline

- **Background**
- **Updates since October 2024**
- **Discussion of Alternatives and Options, impacts (Ch 2 and 4)**
- **Environmental impacts**
- **Management considerations**
  - **regulatory approaches**
  - **monitoring, management, and enforcement**
- **Considerations for decision making moving forward**

image credit: NOAA Fisheries

Background:

Section 3.1 pg. 27

§ 679.2 “Authorized Fishing Gear”(14) Pelagic trawl gear:

Aft Section
< 5.5 inch stretched mesh

Middle Section
> 5.5 inch stretched mesh and aft of fishing circle

Forward Section
Forward of the fishing circle

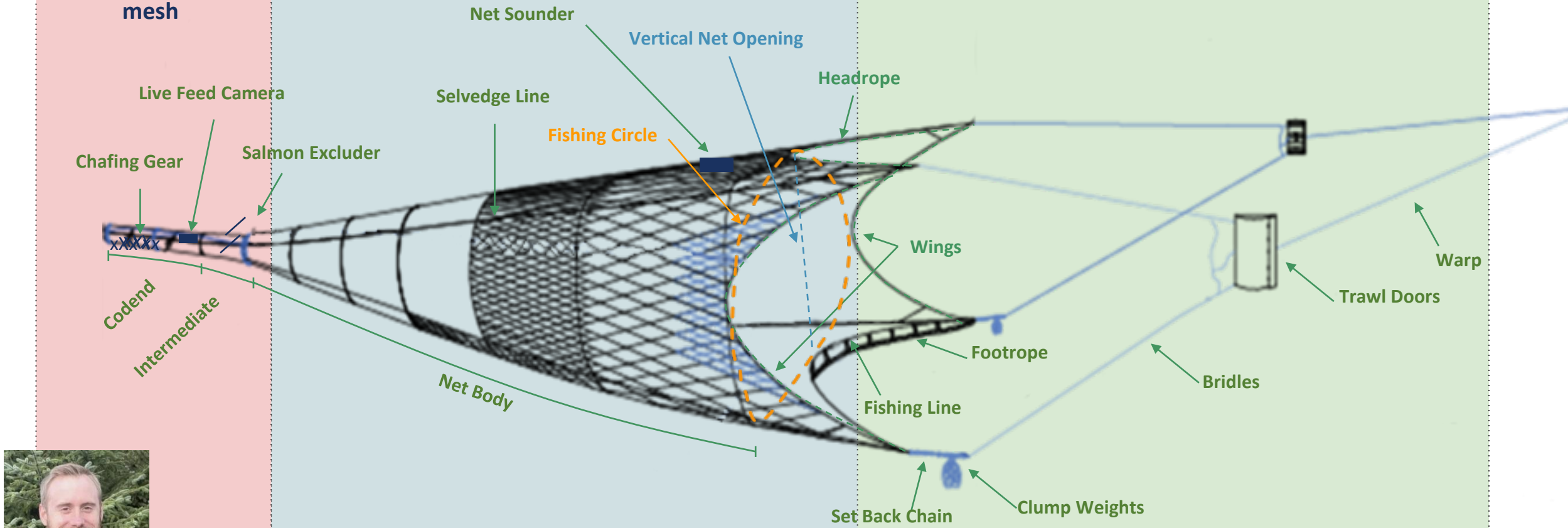


Image modified from: Swan Net Gundry

Additions since October 2024

Summarized on pg. 5

- **Updated description of alternatives (Chapter 2)**
  - **Metallic components**
- **Updated analysis of impacts (Chapter 4)**
- **Added Environmental Impacts (Chapter 5)**
- **Draft revisions to regulations (Chapter 6)**
- **Chapter 6 has been re-organized**
- **Section 6.6 has been revised with comments on the enforceability of the Council's alternatives and options**

image credit: NOAA Fisheries

This Action:

Purpose and Need (Section 1.1, pg 8)

Update the regulatory definition of pelagic trawl gear to:

- Allow commonly used components in codends and bycatch excluder devices
- Allow instrumentation necessary to monitor the net performance;
- Remove unnecessary outdated text.

Alternatives (Chapter 2, pg 16)

- **Alternative 1: No Action**
- **Alternative 2: Revise the definition with 5 options that revise specific limitations on pelagic trawl gear designs.**

Alternative 1: No Action

Section 2.1 pg 16
Section 4.1 pg. 45

Regulations remain unchanged under Alt. 1

- Referred to as “regulatory status quo” throughout analysis
  (vs. “operational status quo,” how modern gear is commonly configured)
- This regulatory language is outdated and portions of the definition could be clarified
- Current limitations disallow commonly used gear components and configurations that serve important conservation and management purposes, including:
  - use of flotation in the codend (addressed by Alt. 2, Option 1 & Option 3a/3b)
  - use of instrumentation throughout the net (addressed by Alt. 2, Option 4 & Option 5)
  - use of commonly used salmon excluders (addressed by Alt. 2, Options 3, 4, and 5)

Alternative 1: No Action (Regulatory Status Quo)

Aft Section

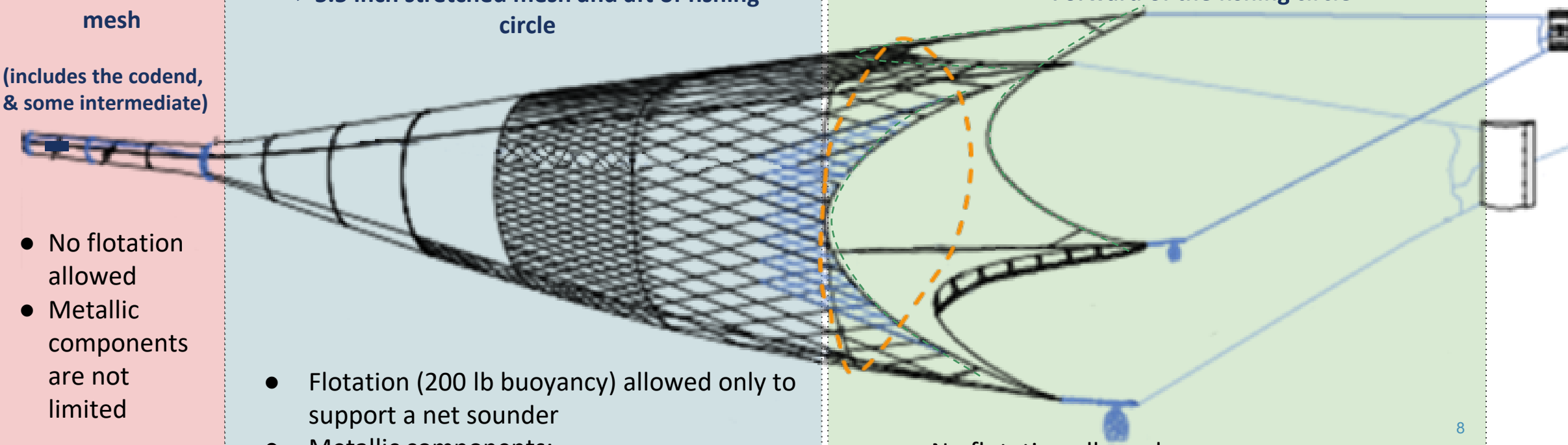
< 5.5 inch stretched mesh

(includes the codend, & some intermediate)

- No flotation allowed
- Metallic components are not limited

Middle Section

> 5.5 inch stretched mesh and aft of fishing circle



- Flotation (200 lb buoyancy) allowed only to support a net sounder
- Metallic components:
  - connectors (hammer locks or swivels) allowed
  - a net sounder is allowed
- Minimum mesh sizes to ensure large spacing to reduce bycatch

Forward Section

Forward of the fishing circle

- No flotation allowed
- Metallic components are generally allowed
- Only two weighted lines on bottom of trawl between wingtip and footrope are allowed
- Wingtips can have weights

Alternative 1: No Action potential impacts

Section 4.1 pg. 45-48

The no action alternative may negatively impact pelagic trawl gear users, and may be contradictory to conservation and management goals.

Under Alt. 1, the regulatory definition of pelagic trawl gear would not reflect, or allow for, the following commonly used modern gear configurations and components in certain areas of the net:

- **Flotation**
  - salmon bycatch excluder designs (e.g. over/under excluders)
  - codend (used to offset catch weight, and weight of chain riblines)
- **Metallic components**
  - salmon bycatch excluder designs (e.g. weighted flapper panels in over/under design)
  - use aft of 5.5 inch stretched mesh (e.g. for chain riblines in the codend) would remain ambiguous
- **Technology (other than a net sounder device)**
  - instrumentation that aids in improving CPUE (various sensing technology)
  - instrumentation used in bycatch excluder devices (live feed cameras, lights)

Alternative 1: No Action potential impacts

Section 4.1 pg. 45-48

Gear designs that comply with all aspects of the existing pelagic trawl gear definition could have limited functionality.

- Codends without flotation would have reduced buoyancy
  - Could make the gear less efficient (or non-functional under certain conditions)
  - Could increase bottom contact
- Salmon bycatch excluder devices without flotation, metallic components, or instrumentation are likely less efficient than designs that use these components
  - Gear operators may be limited to suboptimal excluder device designs
- Limiting technology (other than a net sounder device) from being attached to the middle portion of the net serves no conservation or management purpose.
  - Could reduce efficiency greatly, including reducing CPUE and reducing the functionality of bycatch excluder devices

Alternative 2: Revise specific limitations of pelagic trawl gear design:

Section 2.2 pg 19

- ***Option 1:*** Specify that limitations on flotation and metallic components are not applicable to the codend.
- ***Option 2:*** Remove outdated text related to parallel line trawls.
- ***Option 3:*** Allow the use of flotation aft of [5.5 or 15] inch stretched mesh.
- ***Option 4:*** Allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear. Floats, capable of providing up to 100 lb (45.3 kg) of buoyancy, may be attached to or within 6 feet of each instrument.
- ***Option 5:*** Allow the use of metallic components forward of the fishing circle, aft of the fishing circle and forward of [5.5 or 15] inch stretched mesh, and/or aft of [5.5 or 15] inch stretched mesh.

Alternative 2: Options 1, 3, 4, and 5 all deal with metallic components and flotation

"Metallic components" may include the following:

- **electronic instruments that contain metal**
  (e.g. net-sounder devices, cameras, electronic sensors)
- **connectors**
  (e.g., hammerlocks and swivels), and
- **non-electronic metallic components**
  (e.g., chains, weights, weighted panels, wires, netting with metal core, etc.)
  - Weighted
  - Non-weighted

Connectors

image credit: England marine

image credits: Seattle Marine & Fishing Supply co.

Weighted panels

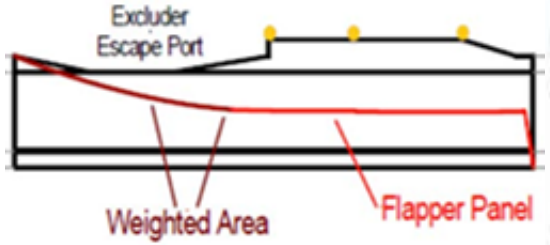


image credit: EFP 2013-1, March 2015

Trawl Sonar and other Electronic Instruments

image credit: WESMAR

Chain riblines

Flotation:

- Where flotation should be allowed in the net (Alt. 2, Op. 1 and 3)
- How much flotation should be allowed for instruments (Alt. 2 Op. 4)

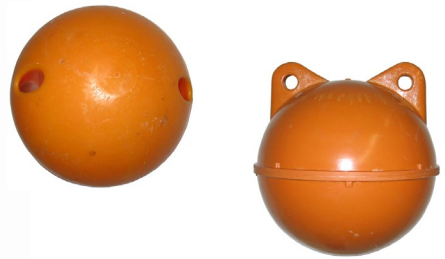


image credits: Seattle Marine & Fishing Supply co.

Alternative 2, Option 1: Allow flotation and metal components in the codend

Section 2.2.1 pg. 20

Codend
(Aft of selvedge line or < 5.5 inch stretched mesh)

If Op. 1 selected:
- **allow flotation**
- **clarify that metallic components are allowed (including electronic instruments)**

Middle Section
> 5.5 inch stretched mesh and aft of fishing circle

- *All regulations pertaining to this section of the net remain unchanged*

Forward Section
Forward of the fishing circle

- *All regulations pertaining to this section of the net remain unchanged*

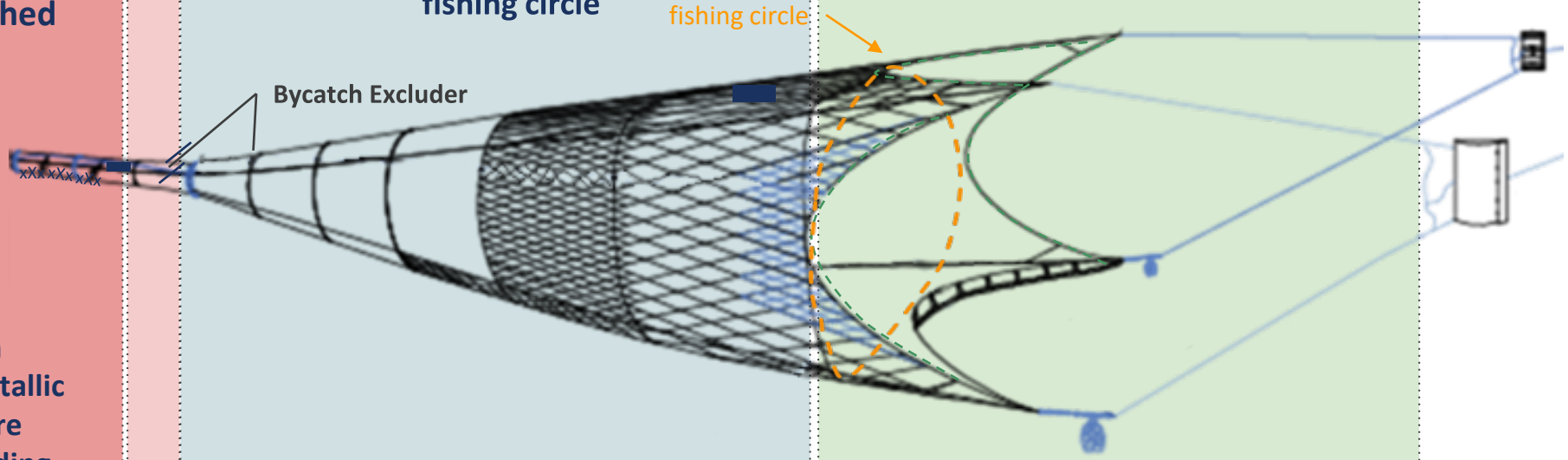


Image modified from: Swan Net Gundry

Alternative 2, Option 1: Allow metal components and flotation in the codend

Section 4.2.1 pg. 49

Consistent with operational status quo

Metallic components

- improve safety
- increase efficiency

Flotation

- used to offset weighted components
- can aid in net deployment
- reduces potential for codend to touch the seafloor

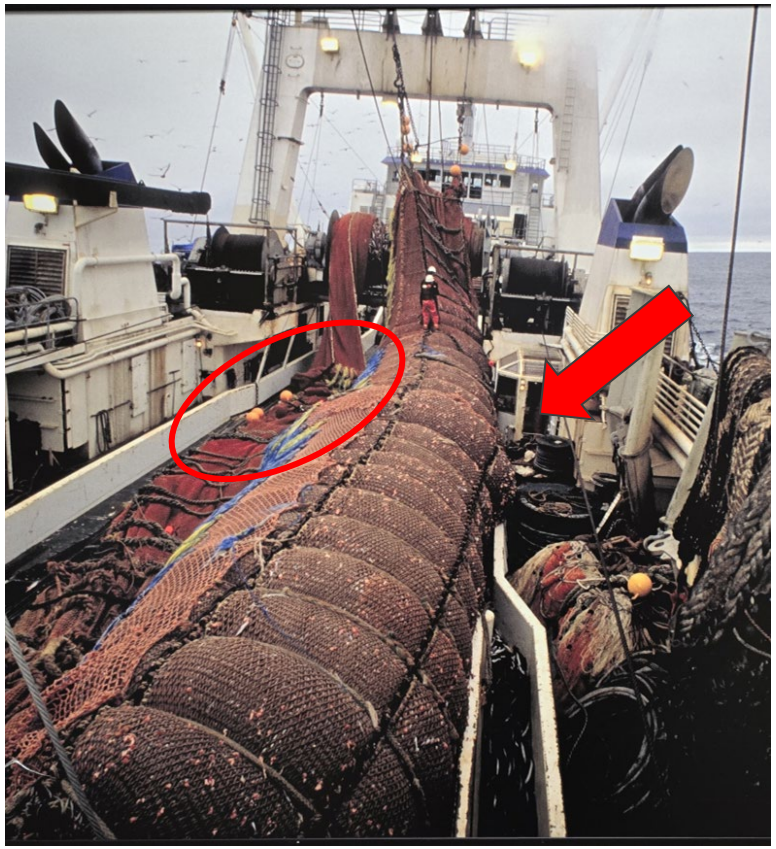


Image credit: NOAA Fisheries

Alternative 2, Option 2: Remove outdated text relating to parallel line trawls

Section 2.2.2 pg 20
Section 4.2.2 pg 50

679.2 “authorized Fishing Gear”(14)(iii)(B) [Pelagic Trawl gear] Has no parallel lines spaced closer than 64 inches (162.6 cm) from all points on the fishing line, headrope, and breast lines and extending aft to a section of mesh, with no stretched mesh size of less than 60 inches (152.4 cm) extending aft for a distance equal to or greater than one-half the vessel's LOA;

- Parallel line trawls are obsolete

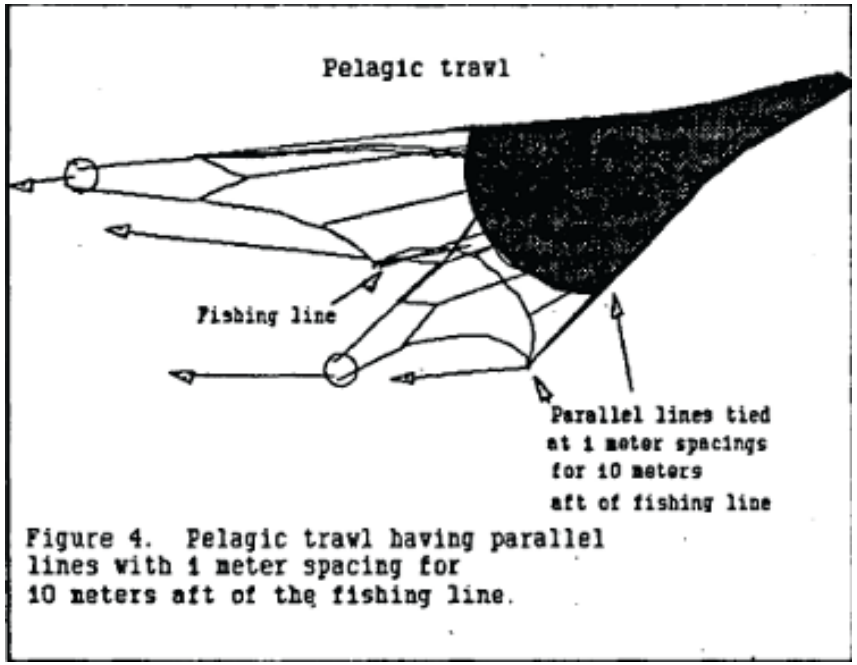


Figure 4. Pelagic trawl having parallel lines with 1 meter spacing for 10 meters aft of the fishing line.

Image credit: NOAA Fisheries

Alternative 2, Option 3: Allow the use of flotation aft of *Sub. 1)* 5.5 inch stretched mesh or *Sub 2)* 15 inch stretched mesh

Section 2.2.3 pg. 21
Section 4.2.3 pg. 51

Codend
(<5.5 inch stretched mesh)

Bycatch Excluder Devices

Flotation allowed under Option 3, Suboption 1 or 2

- Restrictions on metallic components remain unchanged (any metallic components allowed*)

Aft Section
<15 inch stretched mesh

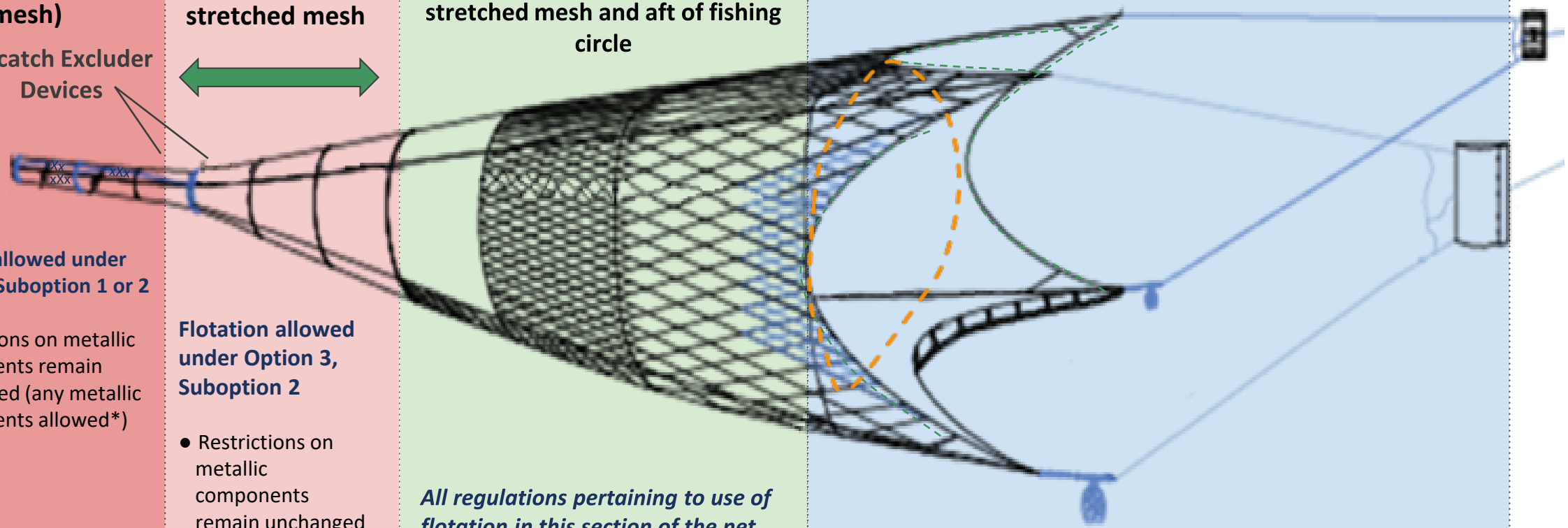
Flotation allowed under Option 3, Suboption 2

- Restrictions on metallic components remain unchanged (connectors & one net sounder only)

Middle Section
Forward of [5.5 or 15] inch stretched mesh and aft of fishing circle

All regulations pertaining to use of flotation in this section of the net remain unchanged

Forward Section
Forward of the fishing circle



All regulations pertaining to use of flotation in this section of the net remain unchanged

Image modified from: Swan Net Gundry

Alternative 2, Option 3:
Salmon Excluders

Section 3.2.3, pg. 35

"Flapper" style salmon excluder tested in 2013.

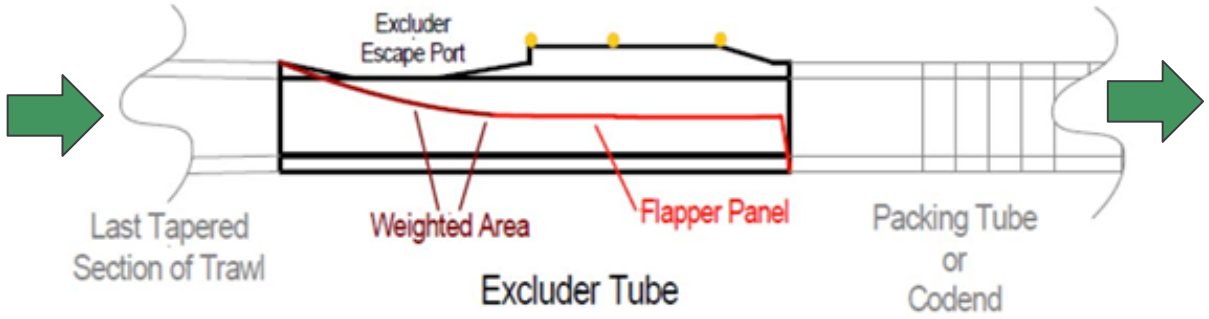


Image credit: EFP 2013-1, March 2015

"Over/Under" style salmon excluder tested in 2014.

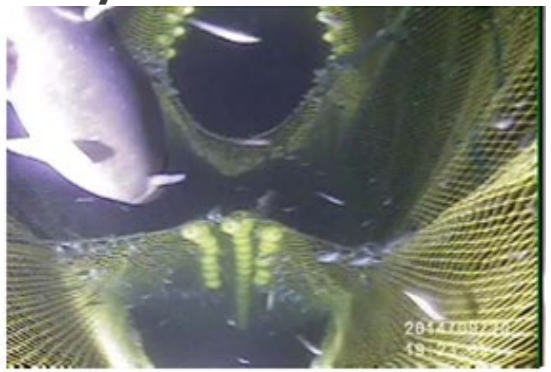


Image credit: EFP 2013-1, March 2015

SALMON EXCLUDER DEVICE TECHNOLOGY

IS USED BY EVERY VESSEL.

Ongoing innovation and collaborative research play pivotal roles in developing technology aimed at reducing bycatch. The Salmon Excluder Device, used by every vessel, uses lights to attract swimming Chinook salmon out of open net panels, reducing salmon bycatch.

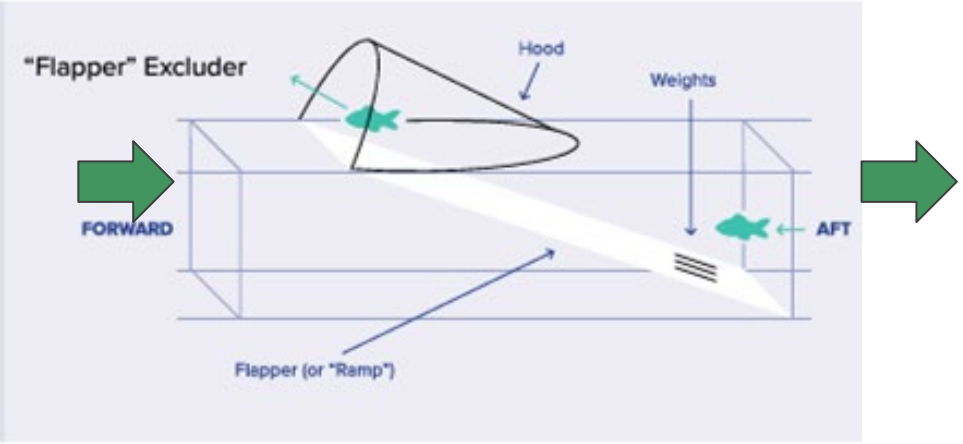


image credit: Pollock Conservation Cooperative

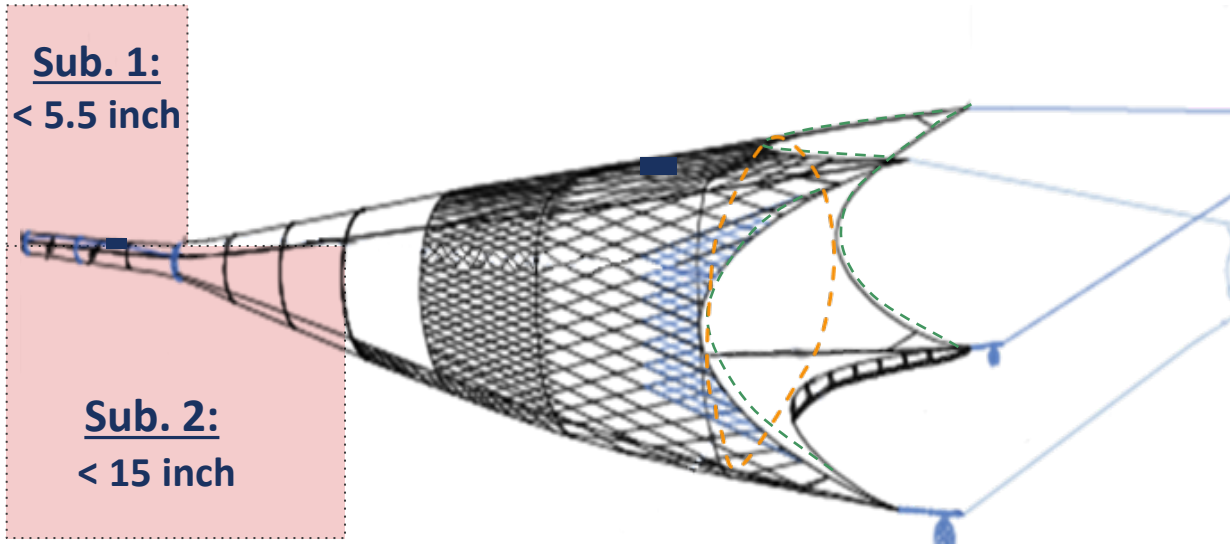
Alternative 2, Option 3: Impacts

Section 4.2.3, pg. 51

- Primary impact is the continued function of bycatch excluder devices, and codends
  - Flotation is necessary in multiple common salmon bycatch excluder designs (over/under, and flapper)
  - Some designs do not require flotation, but designs w/ flotation are considered to be more effective

- Salmon bycatch excluders are typically located in the aft section of the net.

- All excluders in current gear configurations are located **aft of the 15 inch stretched mesh, consistent with the section of the net addressed in Suboption 2.**

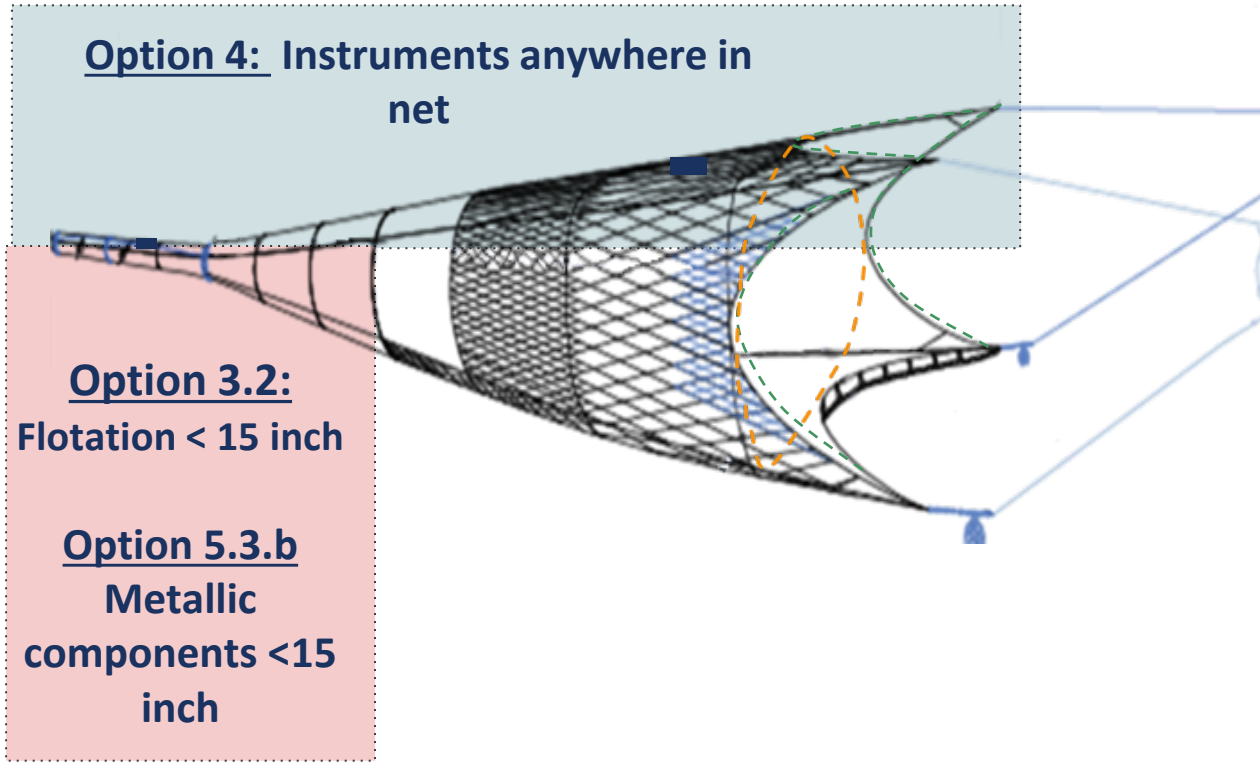


Alternative 2, Option 3: Impacts on bycatch excluder designs

Section 4.2.3, pg. 51

- Option 3 only addresses flotation. Other options address other necessary components in bycatch excluders (e.g. live feed cameras, lights, and weighted flapper panels)

- Selecting Option 3, Suboption 2 in combination with Option 4 and/or* Option 5 Suboption 3(b) would allow the use of bycatch excluder components (flotation, instrumentation, and metallic components) in all portions of the net that salmon excluder devices are currently located in.



Alternative 2, Option 4: Allow instruments capable of observing, monitoring, or adjusting the fishing gear, catch, fishing activity, or fishing environment (including seafloor clearance) to be attached to pelagic trawl gear. Floats, capable of providing up to 100 lb (45.3 kg) of buoyancy, may be attached to or within 6 feet of each instrument.

Section 2.2.4, pg. 22
Section 4.2.4, pg. 53

Codend
(<5.5 inch stretched mesh)

Bycatch Excluder Devices

Common components that would be allowed:

- **catch sensors**
- **instruments used in salmon excluder devices**

Aft Section
<15 inch stretched mesh

common components that would be allowed:

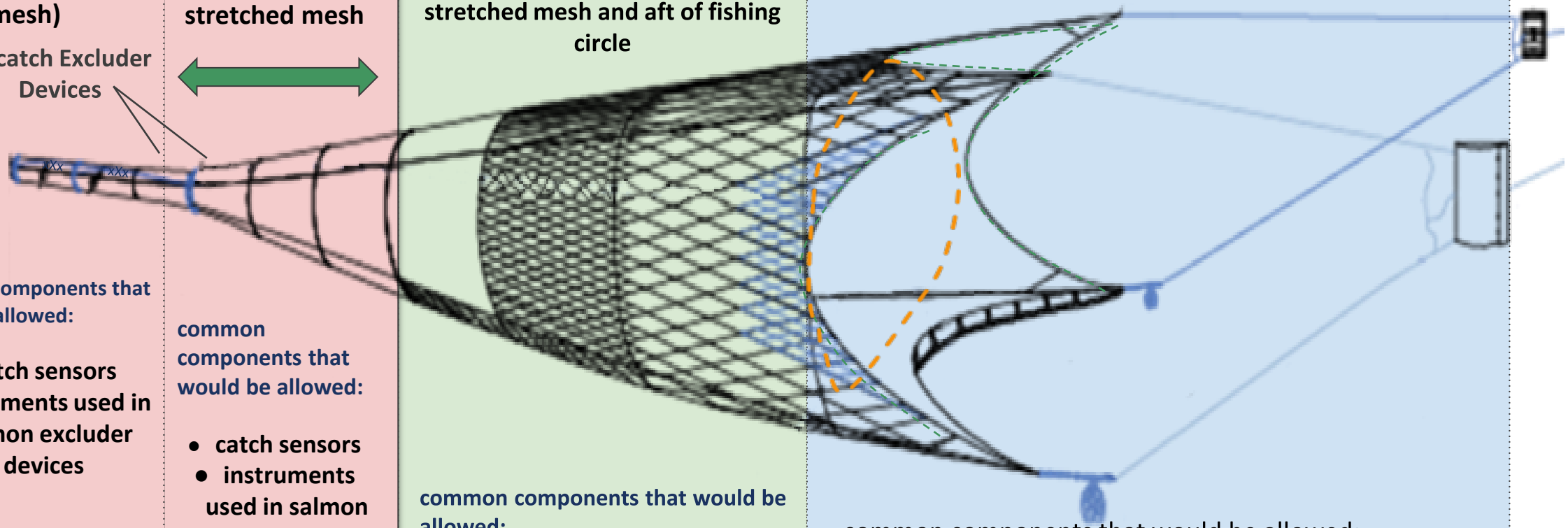
- **catch sensors**
- **instruments used in salmon excluder devices**

Middle Section
Forward of [5.5 or 15] inch stretched mesh and aft of fishing circle

common components that would be allowed:

- **trawl sonar**
- **depth / temperature sensor**

Forward Section
Forward of the fishing circle



common components that would be allowed:

- **distance sensors**
- **bottom contact sensors**
- **additional sensing / monitoring instruments**

Alternative 2, Option 4: Items highlighted for Council input

Summary of Items pg. 6
Section 4.2.4 pg. 53

- Should either 100 lb or 200 lb of buoyancy be allowed for a net sounder?
- Should the buoyancy limitation in Option 4 be structured in a way that would maintain limits on the use of flotation in the forward portion of pelagic trawl gear (head rope), and if so how?
- Are instruments that contain metal considered metallic components? If so, how should Option 4 and Option 5 be interpreted?
  - to allow or limit the location of such instruments?
  - should the function of instruments be limited (Option 4), or should all instruments be allowed, regardless of function (Option 5)?
  - should 100lb flotation be allowed for instruments (Option 4) regardless of location?
- What instruments should be allowed that “adjust the catch, fishing activity, or fishing environment”?
  - Further clarification or specification on which adjustments or instruments are allowed, and/or which are prohibited would be helpful.

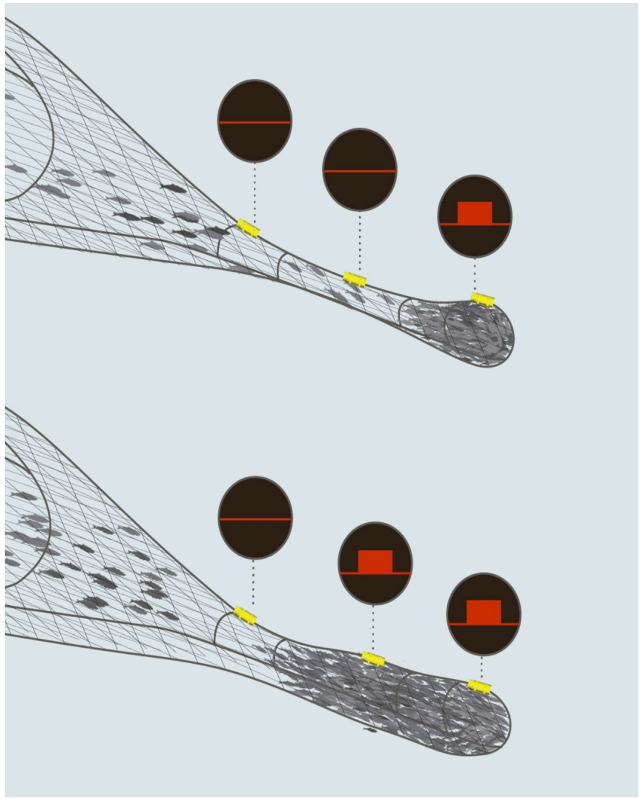


image credit: Marport

Alternative 2, Option 4: Impacts

Section 4.2.4, pg. 53

- Commonly used instrumentation would be allowed anywhere in pelagic trawl nets
- Examples include catch sensors, net sounders, doorspread sensors, trawl warp measurement sensors, depth & temperature sensors, lights, live-feed cameras, etc.
- Provide benefits for vessel operators; instrumentation can allow vessel operators to increase efficiency, reduce safety risks to crew, reduce loss of catch, etc
  - Data collected by instrumentation could also be useful as a management tool in the future

Headline height sensor
image credit: Notus Electronics

Trawl sonar
image credit: WESMAR

Catch sensor
image credit: WESMAR

Trawl camera with integrated lights
image credit: MARINTEC

Alternative 2, Option 5: Allow the use of metallic components in the following locations:

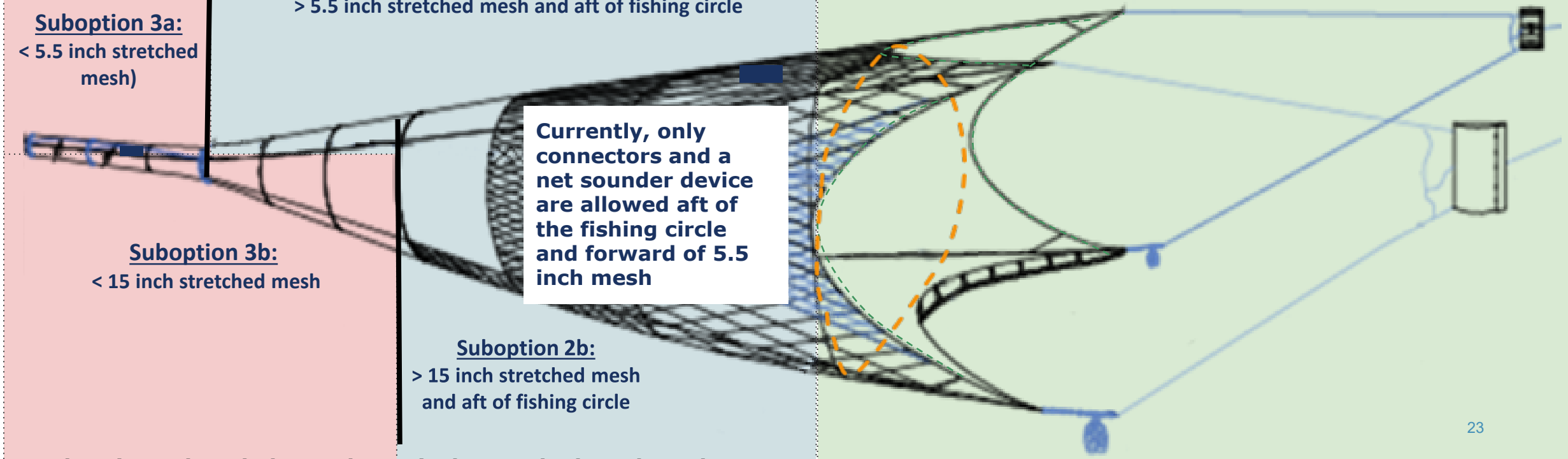
Section 2.2.5, pg. 24

Suboption 3a and 2a use the 5.5 inch stretched mesh as the boundary between the aft and middle sections of the net

Suboption 1:
Forward of the fishing circle

Suboption 2a:
> 5.5 inch stretched mesh and aft of fishing circle

Suboption 3a:
< 5.5 inch stretched mesh)



Currently, only connectors and a net sounder device are allowed aft of the fishing circle and forward of 5.5 inch mesh

Suboption 3b:
< 15 inch stretched mesh

Suboption 2b:
> 15 inch stretched mesh and aft of fishing circle

Suboptions 3b and 2b use the 15 inch stretched mesh as the boundary between the aft and middle sections of the net

Alternative 2, Option 5: items highlighted for Council input

Summary of Items pg. 6
Section 4.2.5 pg. 56

“metallic components”

- This term is broad and could include metal chains and weights, metal panels, electronic instruments containing metal, connectors or even lines containing metal filaments
- The Council should clarify what universe of components it intends to regulate as “metallic components” in each portion of the net, and suggest parameters for determining what may or may not qualify as a metallic component.
- The Council could decide to move away from the term “metallic components” altogether and instead specify what types of components it wants to regulate in each part of the net

image credit: WESMAR

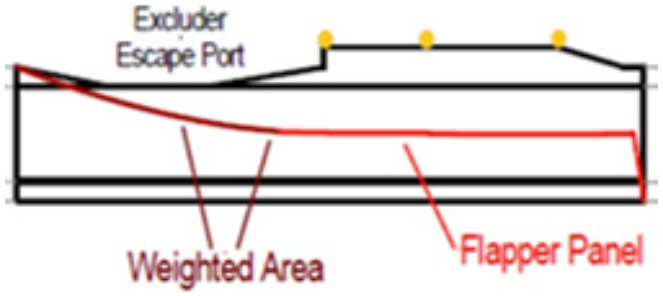


image credit: EFP 2013-1, March 2015

image credit: Seattle Marine & Fishing Supply co.

Option 5 Impacts

Section 4.2.5, pg. 56

Original rationale behind limiting metallic components was to **disallow the use of heavy weighted components (e.g. chains, weights) from the middle section of the net.**

The Council may not want to treat all metallic components in the same manner as these heavy weighted materials. If so the Council should specify what types of metallic components they would specifically like to limit in each portion of the net including:

1. **electronic instruments that contain metal**

   (e.g. net-sounder devices, cameras, electronic sensors)

1. **connectors**

   (e.g., hammerlocks and swivels)

1. **non-electronic metallic components**

   (e.g., chains, weights, weighted panels, wires, netting with metal core, etc.)

   a. Weighted
   b. Non-weighted

Option 5 Impacts

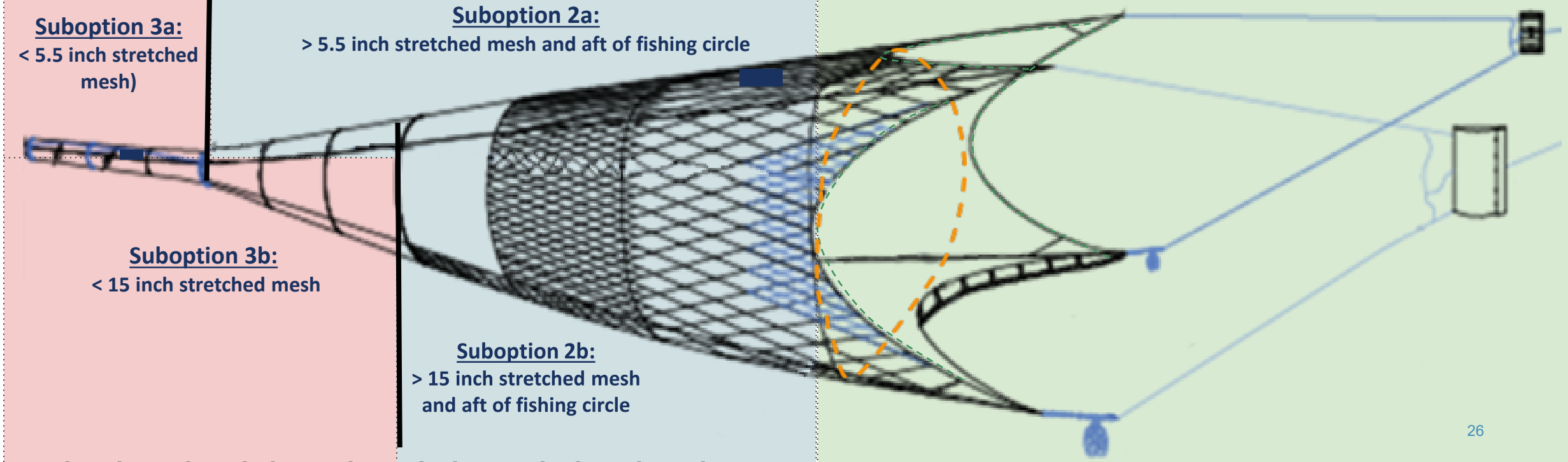
Section 4.2.5, pg. 56

Suboption 3a and 2a use the 5.5 inch stretched mesh as the boundary between the aft and middle sections of the net

Suboption 1:
Forward of the fishing circle

Suboption 3a:
< 5.5 inch stretched mesh)

Suboption 2a:
> 5.5 inch stretched mesh and aft of fishing circle



Suboption 3b:
< 15 inch stretched mesh

Suboption 2b:
> 15 inch stretched mesh and aft of fishing circle

Suboptions 3b and 2b use the 15 inch stretched mesh as the boundary between the aft and middle sections of the net

Option 5 Impacts: Electronic Instrumentation & Connectors

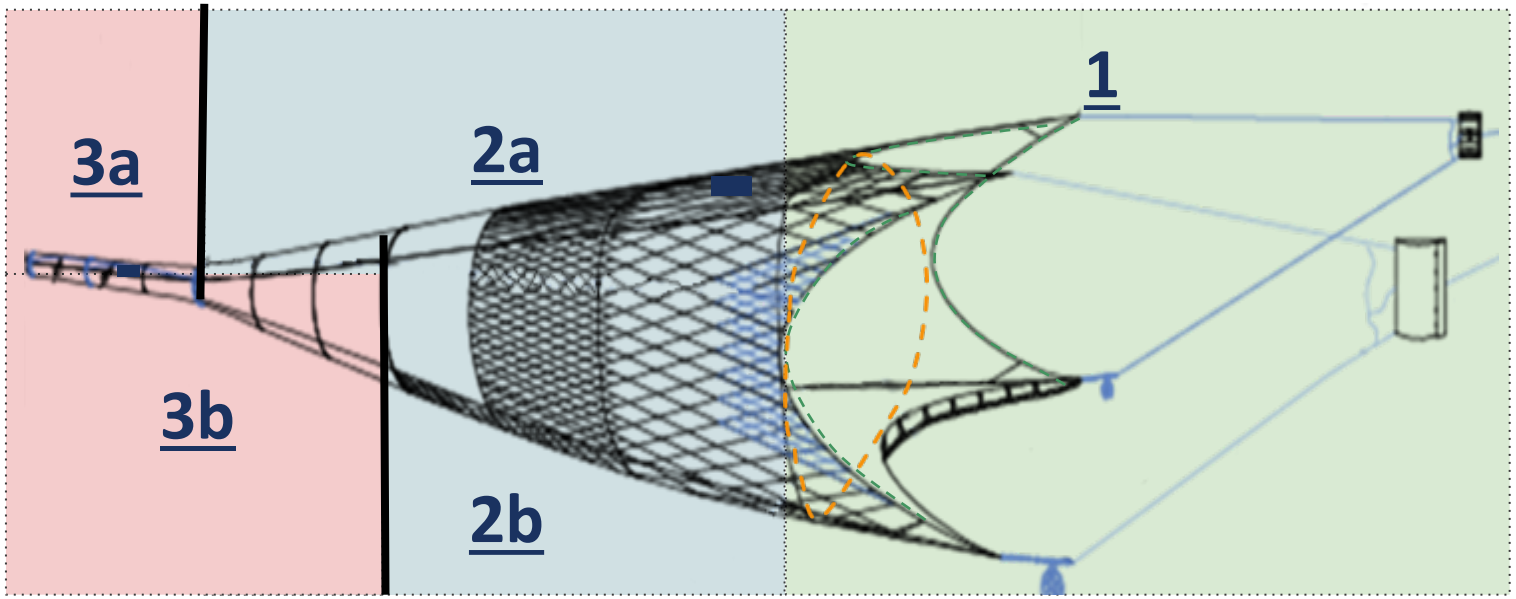
Section 4.2.5, pg. 56

Electronic instrumentation

- Currently allowed: aft of 5.5 inch stretched mesh **(Sub. 3a)** and forward of fishing circle **(Sub. 1)**
- Commonly located: throughout the net **(all suboptions)**

Connectors

- Currently allowed: anywhere in the net **(all suboptions)**
- Commonly located: anywhere in the net **(all suboptions)**

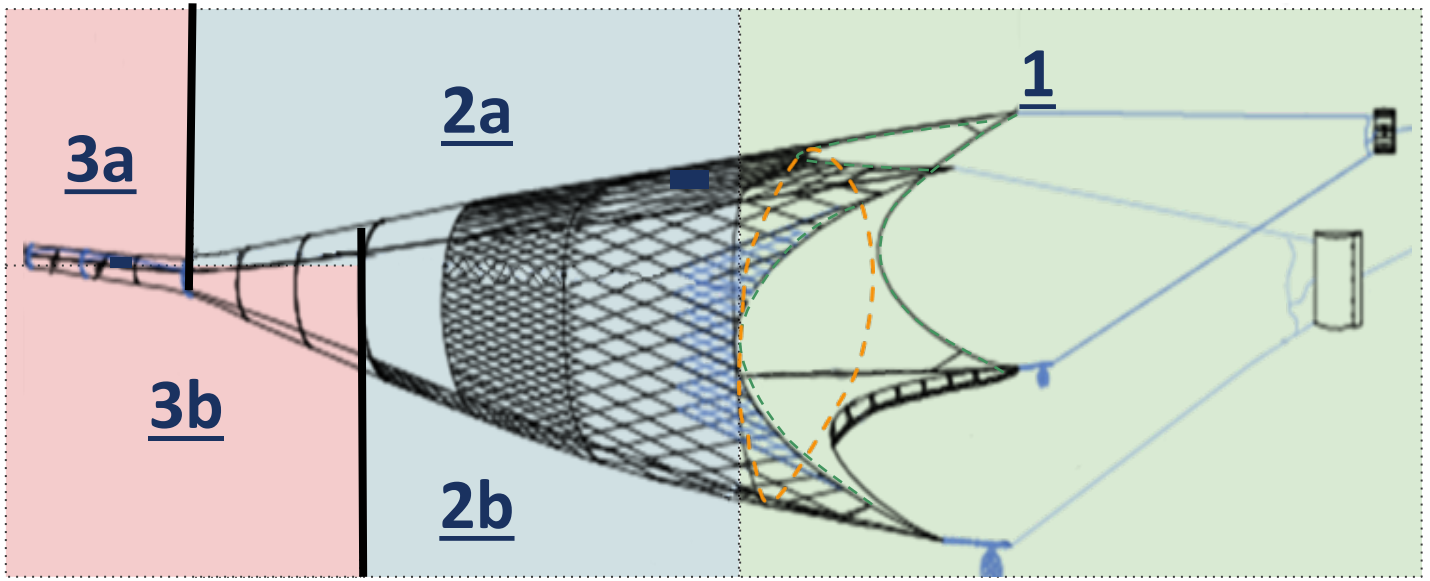


Option 5 Impacts: Weighted metallic components

Section 4.2.5, pg. 56

Non-electronic metallic components: Weighted metallic components (e.g. chains, weights, etc)

- Currently allowed: aft of 5.5 inch stretched mesh **(Sub. 3a),** limited use allowed in forward section of the net **(Sub. 1)**
- Currently used: aft of 15 inch stretched mesh* **(Sub 3b)**, limited use in forward section of the net **(Sub. 1)**



*Weighted metallic components located aft of 15 inch stretched mesh (Sub. 3b) generally include weighted panels used in salmon bycatch excluder devices.

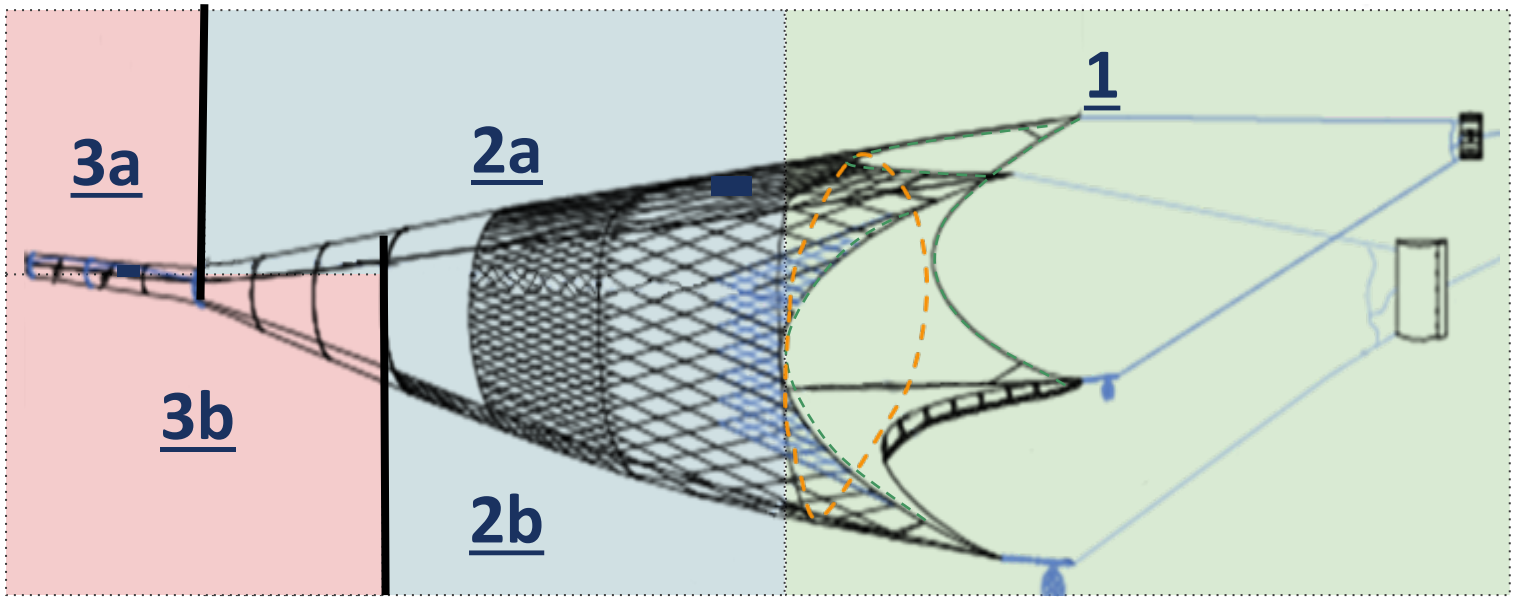
Suboption 2 is not consistent with the regulatory status quo or operational status quo, and would not support the original rationale behind limiting metallic components from the middle section of the net.

Option 5 Impacts: Non-weighted metallic components

Section 4.2.5, pg. 56

Non-electronic metallic components: Non-weighted metallic components (e.g. webbing, riblines, or other netting that may contain some metal)

- Currently allowed aft of 5.5 inch stretched mesh **(Sub. 3a)** and forward of fishing circle **(Sub. 1)**
- Extent of current use unknown



Restricting components that contain some metal, but do not weigh down a trawl net when attached/used in certain sections, would serve no obvious conservation or management purpose.

The Council may not want to treat these materials in the same manner as heavy weighted metal components.

Option 5: Regulatory status quo vs. operational status quo, by metallic component type

Metallic Component Type	Currently Allowed (Regulatory Status Quo)			Currently Located (Operational Status Quo)		
	Aft Sub. 3a (<5.5”) Sub. 3b (<15”)	Middle Sub. 2a (>5.5”) Sub. 2b (>15”)	Forward (Sub. 1)	Aft Sub. 3a (5.5”) Sub. 3b (15”)	Middle Sub. 2a (>5.5”) Sub. 2b (>15”)	Forward (Sub. 1)
Electronic Instruments	✓		✓	✓	✓	✓
Net Sounder	✓	✓	✓	✓	✓	✓
Connectors	✓	✓	✓	✓	✓	✓
Non-Electronic Metallic Components (All Other Metallic Components)	**✓ (5.5”)**		✓	**✓ (15”)**	**maybe**	✓
Weighted (chains, weights)	**✓ (5.5”)**		✓	**✓ (15”)**		✓
Non-weighted (netting w/ metal core)	**✓ (5.5”)**		✓	**maybe**	**maybe**	**maybe**

All Alternatives: Net Benefit to the Nation

Section 4.4, pg. 63

- If the Council takes action under Alt 2., minor overall net benefit to the Nation is likely to arise

- Action alternative provides benefits to gear operators and users
  - improved regulatory clarity
  - improved flexibility, which is likely to help operators maintain effective bycatch excluder devices and maintain operational efficiency (when compared to operational status quo)

- No direct impact on processors or consumers; action does not affect allocations of fishery resources, location of landings, or markets for fishery resources

Potential Environmental Impacts

Chapter 5 pg. 64

Salmon Prohibited Species Catch (PSC)

- Fisheries using pelagic trawl gear capture salmon as bycatch
  - Chinook salmon
  - Chum salmon

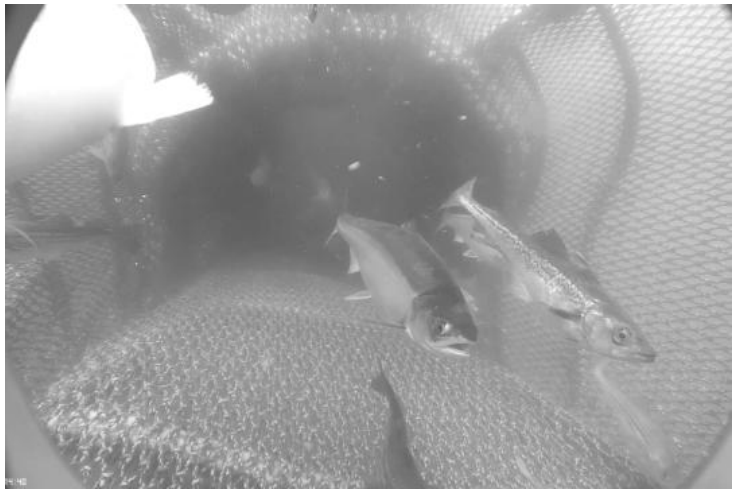


image credit: NOAA Fisheries

Essential Fisheries Habitat (EFH)

- Overall, if pelagic trawl fishing effort time and locations stays the same, the estimated minimal impacts to benthic habitat from gear contact would be expected to say the same.
- A change in the definition that results in more bottom contact by the net would increase impacts to EFH

image credit: NOAA Fisheries

Potential Salmon PSC Impacts

Section 5.2 pg. 68

Salmon bycatch management would remain unchanged, including incentives to reduce or avoid salmon PSC

Alternative 1

- Modifying or removing salmon excluders could change the effectiveness of bycatch excluder devices

Photo credit: EFP 11-01, NMFS

Alternative 2

- Largely beneficial, however:
  - Most excluders are aft of 5.5” stretched mesh, but not all
  - Allowing flotation, metallic components and instrumentation aft of 15” stretched mesh would provide more benefits

Potential Habitat Impacts

Section 5.3 pg. 75

Alternative 1

- Removal of flotation could increase bottom contact
- Changes in fishing effort and/or time due to any altered catch efficiency will change the amount of gear interactions with benthic habitat
  - Less efficient gear may lead to longer fishing events and increased habitat disturbance

Alternative 2

- Not likely to change estimated habitat disturbance from the operational status quo (Options 1-3)

Any expected impacts are largely dependent on Options 4 and 5:

- Option 4, specifically regarding "instruments that can adjust the gear" could potentially allow new net variations
- Option 5, specifically regarding suboption 2, would allow any metallic component in the middle portion of the net which could increase the potential of bottom contact by that portion of the net

Management Considerations: Restructure the definition & limitations

Section 6.3 pg. 83

NMFS recommends:

Restructure the regulations to have a simple definition at § 679.2 that includes the major gear components necessary to distinguish pelagic from nonpelagic gear (*e.g.* no discs, bobbins, or rollers, or chafe protection gear attached to the footrope).

- Additional limitations on specific gear components would be moved to § 679.24 Gear Limitations.
- This is consistent with how the regulations are constructed for nonpelagic trawl gear - with additional limitations set out at 679.24(f)

Management considerations: Draft Regulations

Section 6.3 pg. 84

§ 679.2: *Pelagic trawl gear* means a trawl that has no discs, bobbins, or rollers and has no chafe protection gear attached to the footrope or fishing line (see also gear limitations at § 679.24).

§ 679.24. Gear Limitations:

Limitations on pelagic trawl gear configuration and applicable restrictions would be moved to § 679.24. Alternative 2 would not modify the following restrictions:

- Large mesh mesh size restrictions aft of the fishing line for a distance of half the vessel's LOA.
- Restrictions on the number of weighted lines (fishing line and footrope) between the wing tip and the fishing circle
- Allowance for small mesh needed to attach a net-sounder device
- Allowance for weights on the wing tips.

Management Considerations: Draft Regulations

Section 6.3 pg. 84

§ 679.24. Gear Limitations:

Limitations on use of flotation and metallic components would be revised as described under Alternative 2, Options 1, 3, 4, and 5.

NMFS would draft and prepare exact wording of proposed regulations based on the final Council recommendations.

Management Considerations continued

Chapter 6, Ch. 7

Monitoring, Management, and Enforcement

- Monitoring: no change; option 4 could provide additional monitoring capabilities
- Management: no change
- Enforcement: If pelagic trawl gear components can be detected, then they can be enforced

Safety Considerations:

- Alternative 2, Option 1 could allow for improved or operational status quo safety measures overall

image credit: NMFS

Considerations for Decision Making

Executive Summary, Next Steps pg. 6

Impacts for Consideration:

- This action would allow for current pelagic trawl gear configurations to continue being used
- This action could allow for future pelagic trawl gear innovations (with limitations)
- Suboption decision (5.5” vs. 15”) will impact salmon excluder placement (options 3 and 5)

Seeking Additional Input:

- Buoyancy for net sounder (100 lb or 200 lb?)
- Flotation limitation for the headrope?
- Would be helpful to clarify what types of instruments are allowed that “adjust” the gear, catch, fishing activity, or fishing environment.
- Clarify what universe of components are intended to be regulated as “metallic components”. Alternatively, could instead specify what specific types of components should be regulated in specific parts of the net.
- If instruments (Option 4) are considered metallic components (Option 5), should the areas they are allowed in be limited by Option 5?
- Option 5.2, allowing heavy metallic components in the middle section of the net could increase bottom contact and may be contrary to the stated purpose of this action.

Summary of Considerations for Decision Making

Executive Summary, pg 4

Alternative and Options	Operational Status Quo	Allow common designs for Bycatch Excluder and codends	Facilitates Innovation	Potential to Reduce Bottom Contact
1 - regulatory status quo	NO	NO	Some	NO
2.1 - allow floats and metal in codend	YES	YES	YES	Some
2.2 - remove parallel line trawl reg. text	YES	n/a	n/a	n/a
2.3 - allow flotation in aft section of net (2.3.a. <5.5", or 2.3.b. <15")	YES (Sub. b, <15")	YES (Sub. b, <15")	YES	YES (Sub. b, <15")
2.4 - allow instrumentation	YES	YES	YES	YES
2.5 - allow metallic components in:				
2.5.1 - Forward section of net	YES	n/a	YES	n/a
2.5.2 - Middle section of net	Some (connectors and instruments)	YES (if Sub. a >5.5") n/a (if Sub. b >15")	YES - flexibility to use any metallic components (instruments, weights, chains, etc)	NO (allowing heavy weights or chains etc.)
2.5.3 - Aft section of net	YES (Sub. b, <15")	NO (if Sub. a <5.5") YES (if Sub b, <15")	YES	n/a

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