

FWS COLUMBIA RIVER 2010 CHINOOK MASS MARKING

1/8/2010

Species: Chinook

Area: Columbia River

Brood: 2009

Release Year: 2010 and 2011

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-----------------------------|-------------------------|----------------------------------|--|----------------|---|-----------|---------------------------------------|-------------------------------|---|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Spring Creek NFH | Spring Creek - Tule Falls | 360,000 | 360,000 | 9,790,000 | 0 | 10,510,000 | Y | Numbers reduced under Spr. Cr. Reprogramming |
| FWS | Little White Salmon NFH | Little White Salmon - Tule Falls | 150,000 | 0 | 1,550,000 | 0 | 1,700,000 | Y | New release location under Spr. Cr. Reprogramming |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 200,000 | 1,600,000 | 0 | 2,000,000 | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 0 | 1,500,000 | 0 | 1,700,000 | Y | YN-Prosser release |
| Total Fall Chinook | | | 910,000 | 560,000 | 14,440,000 | 0 | 15,910,000 | | |
| FWS | Carson NFH | Carson - Springs 1+ | 75,000 | 0 | 1,045,000 | 0 | 1,120,000 | Y | Walla Walla R. release |
| FWS | Carson NFH | Carson - Springs 1+ | 50,000 | 0 | 200,000 | 0 | 250,000 | Y | Hood River release, new program in 2009 |
| FWS | Carson NFH | Hood River - Springs 1+ | 50,000 | 0 | 0 | 0 | 50,000 | Y | Drano Lake release |
| FWS | Willard NFH | Little White Salmon - Springs 1+ | 75,000 | 0 | 400,000 | 0 | 475,000 | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 75,000 | 0 | 475,000 | 0 | 550,000 | Y | White River/Wenatchee restoration program |
| FWS | Little White Salmon NFH | White R. - Wenatchee Springs 1+ | 0 | 150,000 | 0 | 0 | 150,000 | N | |
| FWS | Warm Springs NFH | Warm Springs - Springs 1+ | 552,000 | 0 | 0 | 0 | 552,000 | Y | Program reduction from 1.625 M |
| FWS | Leavenworth NFH | Leavenworth - Springs 1+ | 220,000 | 0 | 980,000 | 0 | 1,200,000 | Y | AD marking started in 2010 |
| FWS | Winthrop NFH | Methow - Springs 1+ | 600,000 | 0 | 0 | 0 | 600,000 | Y | |
| FWS | Kooskia NFH | Kooskia - Springs 1+ | 100,000 | 0 | 625,000 | 0 | 725,000 | Y | |
| FWS | Dworshak NFH | Dworshak - Springs 1+ | 120,000 | 0 | 930,000 | 0 | 1,050,000 | Y | |
| Total Spring Chinook | | | 1,917,000 | 150,000 | 4,655,000 | 0 | 6,722,000 | | |
| Total Chinook | | | 2,827,000 | 710,000 | 19,095,000 | 0 | 22,632,000 | | |

Total Chinook Production 22,632,000
Total Percent Marked 97%

FWS COLUMBIA RIVER 2009 CHINOOK MASS MARKING

1/23/2009

Species: Chinook
 Area: Columbia River
 Brood: 2008
 Release Year: 2009 and 2010
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|--------|-------------------------|------------------------------------|--|------------------|---|-------------|---------------------------------------|-------------------------------|--|
| | | | Ad Clipped | Unc clipped | Ad Clipped | Unc clipped | | | |
| FWS | Spring Creek NFH | Spring Creek - Tule Falls | 360,000 | 360,000 | 9,790,000 | 0 | 10,510,000 | Y | Numbers reduced under Spring Creek Reprogramming |
| FWS | Little White Salmon NFH | Little White Salmon - Tule Falls | 150,000 | 0 | 1,550,000 | 0 | 1,700,000 | Y | New release location, part of Spr. Cr. Reprogramming |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 200,000 | 1,600,000 | 0 | 2,000,000 | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 0 | 1,500,000 | 0 | 1,700,000 | Y | YN-Prosser release |
| | | Total Fall Chinook | 910,000 | 560,000 | 14,440,000 | 0 | 15,910,000 | | |
| FWS | Carson NFH | Carson - Springs 1+ | 75,000 | 0 | 1,045,000 | 0 | 1,120,000 | Y | Walla Walla R. release |
| FWS | Carson NFH | Carson - Springs 1+ | 50,000 | 0 | 200,000 | 0 | 250,000 | Y | Hood River release, new program |
| FWS | Willard NFH | Hood River - Springs 1+ | 50,000 | 0 | 0 | 0 | 50,000 | Y | Drano Lake release |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 75,000 | 0 | 400,000 | 0 | 475,000 | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 75,000 | 0 | 475,000 | 0 | 550,000 | Y | White River/Wenatchee restoration program |
| FWS | Little White Salmon NFH | White River - Wenatchee Springs 1+ | 0 | 85,000 | 0 | 0 | 85,000 | N | |
| FWS | Warm Springs NFH | Warm Springs - Springs 1+ | 675,000 | 0 | 0 | 0 | 675,000 | Y | |
| FWS | Leavenworth NFH | Leavenworth - Springs 1+ | 200,000 | 0 | 1,000,000 | 0 | 1,200,000 | Y | Program reduction from 1.625 M |
| FWS | Winthrop NFH | Methow - Springs 1+ | 0 | 500,000 | 0 | 0 | 500,000 | N | Restoration program |
| FWS | Kooskia NFH | Kooskia - Springs 1+ | 110,000 | 0 | 540,000 | 0 | 650,000 | Y | |
| FWS | Dworshak NFH | Dworshak - Springs 1+ | 120,000 | 0 | 930,000 | 0 | 1,050,000 | Y | |
| | | Total Spring Chinook | 1,430,000 | 585,000 | 4,590,000 | 0 | 6,605,000 | | |
| | | Total Chinook | 2,340,000 | 1,145,000 | 19,030,000 | 0 | 22,515,000 | | |

Total Chinook Production 22,515,000
Total Percent Marked 95%

FWS COLUMBIA RIVER 2008 CHINOOK MASS MARKING

1/15/2008

Species: Chinook
 Area: Columbia River
 Brood: 2007
 Release Year: 2008 and 2009
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CVMT | | Number of fish to be released without a CVMT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-----------------------------|-------------------------|------------------------------------|---|------------------|--|----------------|-------------------|---------------------------------------|-------------------------------|---|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Spring Creek NFH | Spring Creek - Tule Falls | 450,000 | 450,000 | 14,200,000 | 0 | 15,100,000 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 200,000 | 1,600,000 | 0 | 2,000,000 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 0 | 0 | 650,000 | 850,000 | N | N | YN-Prosser release, broodstock shortfall, ~1/2 of normal 1.7M program |
| WDFW | Priest Rapids | Priest Rapids - URB Falls | 0 | 0 | 0 | 0 | 0 | N | N | Broodstock shortfall, no fish for program in 2008 |
| Total Fall Chinook | | | 850,000 | 650,000 | 15,800,000 | 650,000 | 17,950,000 | | | |
| FWS | Carson NFH | Carson - Springs 1+ | 75,000 | 0 | 1,095,000 | 0 | 1,170,000 | Y | Y | |
| FWS | Willard NFH | Little White Salmon - Springs 1+ | 50,000 | 0 | 400,000 | 0 | 450,000 | Y | Y | Drano Lake release |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 75,000 | 0 | 475,000 | 0 | 550,000 | Y | Y | |
| FWS | Little White Salmon NFH | White River - Wenatchee Springs 1+ | 0 | 150,000 | 0 | 0 | 150,000 | N | N | White River restoration program |
| FWS | Carson NFH | Little White Salmon - Springs 1+ | 50,000 | 0 | 200,000 | 0 | 250,000 | Y | Y | Walla Walla R. release |
| FWS | Warm Springs NFH | Warm Springs - Springs 1+ | 750,000 | 0 | 0 | 0 | 750,000 | Y | Y | Fish loss, production will be lower |
| FWS | Leavenworth NFH | Leavenworth - Springs 1+ | 200,000 | 0 | 1,425,000 | 0 | 1,625,000 | Y | Y | |
| FWS | Entiat NFH | Entiat - Springs 1+ | 0 | 0 | 0 | 0 | 0 | N | Y | Spring Chinook program discontinued |
| FWS | Winthrop NFH | Methow - Springs 1+ | 0 | 600,000 | 0 | 0 | 600,000 | N | N | Restoration program |
| FWS | Kooskia NFH | Kooskia NFH - Springs 1+ | 125,000 | 0 | 475,000 | 0 | 600,000 | Y | Y | |
| FWS | Dworshak NFH | Dworshak - Springs 1+ | 120,000 | 0 | 930,000 | 0 | 1,050,000 | Y | Y | |
| Total Spring Chinook | | | 1,445,000 | 750,000 | 5,000,000 | 0 | 7,195,000 | | | |
| Total Chinook | | | 2,295,000 | 1,400,000 | 20,800,000 | 650,000 | 25,145,000 | | | |

Total Chinook Production 25,145,000
 Total Percent Marked 92%

FWS COLUMBIA RIVER 2006 CHINOOK MASS MARKING

2/6/2006

Species: Chinook
 Area: Columbia River
 Brood: 2005
 Release Year: 2006 and 2007
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-----------------------------|-------------------------|----------------------------------|--|------------------|---|------------------|---------------------------------------|-------------------------------|------------------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | |
| FWS | Spring Creek NFH | Spring Creek - Tuile Falls | 450,000 | 0 | 14,100,000 | 0 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 0 | 1,600,000 | 0 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 0 | 0 | 1,500,000 | N | N | YN-Prosser release |
| WDFW | Priest Rapids | Priest Rapids - URB Falls | 0 | 0 | 1,700,000 | 0 | Y | N | Marked by FWS |
| Total Fall Chinook | | | 850,000 | 650,000 | 17,400,000 | 1,500,000 | | | |
| | | | | | | | | | 20,400,000 |
| FWS | Carson NFH | Carson - Springs 1+ | 75,000 | 0 | 1,095,000 | 0 | Y | Y | Drano L. rel. (from Carson in '05) |
| FWS | Willard NFH | Little White Salmon - Springs 1+ | 50,000 | 0 | 200,000 | 0 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 75,000 | 0 | 675,000 | 0 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 50,000 | 0 | 200,000 | 0 | Y | Y | Walla Walla R. release |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 40,000 | 0 | 170,000 | 0 | Y | Y | Umatilla R. release |
| FWS | Warm Springs NFH | Warm Springs - Springs 1+ | 750,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Leavenworth NFH | Leavenworth - Springs 1+ | 800,000 | 0 | 825,000 | 0 | Y | Y | |
| FWS | Entiat NFH | Entiat - Springs 1+ | 400,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Winthrop NFH | Methow - Springs 1+ | 0 | 600,000 | 0 | 0 | Y | Y | Restoration program |
| FWS | Kooskia NFH | Kooskia NFH - Springs 1+ | 100,000 | 0 | 500,000 | 0 | N | N | |
| FWS | Dworshak NFH | Dworshak - Springs 1+ | 120,000 | 0 | 930,000 | 0 | Y | Y | |
| Total Spring Chinook | | | 2,460,000 | 600,000 | 4,595,000 | 0 | | | |
| | | | | | | | | | 7,655,000 |
| Total Chinook | | | 3,310,000 | 1,250,000 | 21,995,000 | 1,500,000 | | | 28,055,000 |

Total Chinook Production 28,055,000
Total Percent Marked 90%

FWS COLUMBIA RIVER 2005 CHINOOK MASS MARKING

4/27/2005

Species: Chinook
 Area: Columbia River
 Brood: 2004
 Release Year: 2005 and 2006

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|---------------------------------|-------------------------|----------------------------------|--|------------------|---|------------------|---------------------------------------|-------------------------------|------------------------|
| | | | Ad Clipped | Unclassified | Ad Clipped | Unclassified | | | |
| FWS | Spring Creek NFH | Spring Creek - Tuile Falls | 450,000 | 0 | 14,100,000 | 0 | Y | N | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 200,000 | 1,600,000 | 0 | Y | N | |
| FWS | Little White Salmon NFH | Little White Salmon - URB Falls | 200,000 | 0 | 0 | 1,500,000 | N | N | YN-Prosser Release |
| WDFW | Priest Rapids | Priest Rapids - URB Falls | 0 | 0 | 0 | 1,700,000 | N | N | Marked by FWS |
| Total Fall Chinook | | | 850,000 | 650,000 | 15,700,000 | 3,200,000 | | | |
| FWS | Carson NFH | Carson - Springs 1+ | 75,000 | 0 | 1,095,000 | 0 | Y | Y | Drano Lake Release |
| FWS | Carson NFH | Carson - Springs 1+ | 50,000 | 0 | 200,000 | 0 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 75,000 | 0 | 675,000 | 0 | Y | Y | |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 50,000 | 0 | 200,000 | 0 | Y | Y | Walla Walla R. Release |
| FWS | Little White Salmon NFH | Little White Salmon - Springs 1+ | 40,000 | 0 | 170,000 | 0 | Y | Y | Umatilla R. Release |
| FWS | Warm Springs NFH | Warm Springs - Springs 1+ | 750,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Leavenworth NFH | Leavenworth - Springs 1+ | 800,000 | 0 | 825,000 | 0 | Y | Y | |
| FWS | Entiat NFH | Entiat - Springs 1+ | 400,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Winthrop NFH | Methow - Springs 1+ | 0 | 600,000 | 0 | 0 | N | N | |
| FWS | Kooskia NFH | Kooskia NFH - Springs 1+ | 100,000 | 0 | 500,000 | 0 | Y | Y | |
| FWS | Dworshak NFH | Dworshak - Springs 1+ | 120,000 | 0 | 930,000 | 0 | Y | Y | |
| Total Spring Chinook | | | 2,460,000 | 600,000 | 4,595,000 | 0 | | | |
| Total Chinook | | | 3,310,000 | 1,250,000 | 20,295,000 | 3,200,000 | | | |
| Total Chinook Production | | | | | 28,055,000 | | | | |
| Total Percent Marked | | | | | 84% | | | | |

FWS NORTH COAST AND PUGET SOUND 2010 CHINOOK MASS MARKING

1/8/2010

Species: Chinook
 Area: North Coast and Puget Sound
 Brood: 2009
 Release Year: 2010

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|----------------------|--------------|---------------------------|--|-----------|---|-----------|------------------|---------------------------------------|-------------------------------|----------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Makah NFH | Sooes River Falls | 260,000 | 0 | 1,940,000 | 0 | 2,200,000 | Y | Y | |
| FWS | Quinault NFH | Cook Creek/Quinault Falls | 200,000 | 0 | 400,000 | 0 | 600,000 | Y | Y | |
| Total Chinook | | | 460,000 | 0 | 2,340,000 | 0 | 2,800,000 | | | |

Total Chinook Production 2,800,000
Total Percent Marked 100%

FWS NORTH COAST AND PUGET SOUND 2009 CHINOOK MASS MARKING

2/5/2009

Species: Chinook
 Area: North Coast and Puget Sound
 Brood: 2008
 Release Year: 2009

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|--------|--------------|----------------------|--|-----------|---|-----------|---------------------------------------|-------------------------------|------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Makah NFH | | 260,000 | 0 | 1,940,000 | 0 | Y | Y | |
| FWS | Quinault NFH | | 200,000 | 0 | 400,000 | 0 | Y | Y | |
| | | Total Chinook | 460,000 | 0 | 2,340,000 | 0 | | | 2,800,000 |

Total Chinook Production 2,800,000
Total Percent Marked 100%

FWS NORTH COAST AND PUGET SOUND 2008 CHINOOK MASS MARKING

1/15/2008

Species: Chinook
 Area: North Coast and Puget Sound
 Brood: 2007
 Release Year: 2008

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|---------------------------------|--------------|-------|--|------------|---|------------|---------------------------------------|-------------------------------|-------------------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | |
| FWS | Makah NFH | | 260,000 | 0 | 240,000 | 0 | Y | Y | Shortfall from normal 2.4M program. |
| FWS | Quinault NFH | | 200,000 | 0 | 400,000 | 0 | Y | Y | |
| Total Chinook | | | 460,000 | 0 | 640,000 | 0 | 0 | 1,100,000 | |
| Total Chinook Production | | | 1,100,000 | | | | | | |
| Total Percent Marked | | | 100% | | | | | | |

FWS NORTH COAST AND PUGET SOUND 2007 CHINOOK MASS MARKING

1/26/2007

Species: Chinook
 Area: North Coast and Puget Sound
 Brood: 2006
 Release Year: 2007

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|----------------------|--------------|----------------|--|-----------|---|-----------|---------------------------------------|-------------------------------|--|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Makah NFH | Makah Falls | 260,000 | 0 | 1,940,000 | 0 | Y | Y | Decision pending, funding uncertain |
| FWS | Makah NFH | Makah Falls | 0 | 0 | 100,000 | 0 | Y | Y | Educket Cr. release, funding uncertain |
| FWS | Quinault NFH | Quinault Falls | 200,000 | 0 | 400,000 | 0 | Y | Y | Decision pending, funding uncertain |
| Total Chinook | | | 460,000 | 0 | 2,440,000 | 0 | 0 | 2,900,000 | |

Total Chinook Production 2,900,000
Total Percent Marked 100%

FWS NORTH COAST AND PUGET SOUND 2006 CHINOOK MASS MARKING

2/6/2006

Species: Chinook
 Area: North Coast and Puget Sound
 Brood: 2005
 Release Year: 2006

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|----------------------|--------------|----------------|--|----------|---|----------|------------------|---------------------------------------|-------------------------------|---------------------|
| | | | Ad Clipped | Uncipped | Ad Clipped | Uncipped | | | | |
| FWS | Makah NFH | Makah Falls | 260,000 | 0 | 1,940,000 | 0 | 2,200,000 | Y | Y | |
| FWS | Makah NFH | Makah Falls | 0 | 0 | 100,000 | 0 | 100,000 | Y | Y | |
| FWS | Quinault NFH | Quinault Falls | 200,000 | 0 | 400,000 | 0 | 600,000 | Y | Y | Educket Cr. Release |
| Total Chinook | | | 460,000 | 0 | 2,440,000 | 0 | 2,900,000 | | | |

Total Chinook Production 2,900,000
Total Percent Marked 100%

FWS NORTH COAST AND PUGET SOUND 2005 CHINOOK MASS MARKING

4/27/2005

Species: Chinook
 Area: North Coast and Puget Sound
 Brood: 2004
 Release Year: 2005

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|----------------------|--------------|----------|--|-----------|---|-----------|---------------------------------------|-------------------------------|---------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Makah NFH | Makah | 260,000 | 0 | 1,940,000 | 0 | Y | N | |
| FWS | Makah NFH | Makah | 0 | 0 | 100,000 | 0 | Y | N | Educket Cr. Release |
| FWS | Quinault NFH | Quinault | 200,000 | 0 | 400,000 | 0 | Y | N | |
| Total Chinook | | | 460,000 | 0 | 2,440,000 | 0 | 0 | 2,900,000 | |

Total Chinook Production 2,900,000
Total Percent Marked 100%

FWS SACRAMENTO RIVER 2010 CHINOOK MASS MARKING

12/28/2009

Species: Chinook
 Area: Sacramento River
 Brood: 2009 and 2010
 Release Year: 2010 and 2011
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|--------|----------|-------|------------|----------------------|--|-----------|---|-----------|---------------------------------------|-------------------------------|----------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |

General Production received 25% Constant-fractional mark and CWT; actual production will not meet pre-season targets - anticipated to be 11,300,000

| | | | | | | | | | | | | |
|----------------------|----------------------|----------------------------------|------|---------------------------------|------------------|----------|----------|------------------|-------------------|---|---|---|
| FWS | Coleman NFH | Central Valley Fall Chinook | 2009 | Apr. 2010 - Dec. 2010/Jan. 2011 | 3,000,000 | 0 | 0 | 9,000,000 | 12,000,000 | Y | Y | |
| FWS | Coleman NFH | Central Valley Late-fall Chinook | 2010 | | 1,000,000 | 0 | 0 | 0 | 1,000,000 | Y | Y | |
| FWS | Livingston Stone NFH | Sacramento River Winter Chinook | 2009 | Feb. 2010 | 200,000 | 0 | 0 | 0 | 200,000 | Y | Y | General Production received 100% mark and CWT 100% mark and CWT |
| Total Chinook | | | | | 4,200,000 | 0 | 0 | 9,000,000 | 13,200,000 | | | |

Total Chinook Production 13,200,000
Total Percent Marked 32%

FWS SACRAMENTO RIVER 2009 CHINOOK MASS MARKING

12/28/2009

Species: Chinook
 Area: Sacramento River
 Brood: 2008 and 2009
 Release Year: 2009 and 2010
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments | |
|----------------------|----------------------|----------------------------------|------------|--------------------------|--|-----------|---|------------------|---------------------------------------|-------------------------------|----------|--|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Coleman NFH | Central Valley Fall Chinook | 2008 | April 2009/May | 3,000,000 | 0 | 0 | 9,000,000 | 12,000,000 | Y | Y | General Production received 25% Constant-fractional mark and CWT; actual production was 14,021,000 |
| FWS | Coleman NFH | Central Valley Late-fall Chinook | 2009 | Dec 2009/Jan. 2010 | 1,000,000 | 0 | 0 | 0 | 1,000,000 | Y | Y | General Production received 100% mark and CWT; actual production was 1,155,000 |
| FWS | Livingston Stone NFH | Sacramento River Winter Chinook | 2008 | Feb. 2009 | 200,000 | 0 | 0 | 0 | 200,000 | Y | Y | 100% mark and CWT; actual production was 146,000 |
| Total Chinook | | | | | 4,200,000 | 0 | 0 | 9,000,000 | 13,200,000 | | | |

Total Chinook Production 13,200,000
Total Percent Marked 32%

FWS SACRAMENTO RIVER 2008 CHINOOK MASS MARKING

12/28/2009

Species: Chinook
 Area: Sacramento River
 Brood: 2007 and 2008
 Release Year: 2008 and 2009
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|----------------------|----------------------|----------------------------------|------------|----------------------|--|-----------|---|------------------|---------------------------------------|-------------------------------|--|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Central Valley Fall Chinook | 2007 | April 2008/June 2008 | 3,000,000 | 0 | 0 | 9,000,000 | 12,000,000 | Y | General Production received 25% Constant-fractional mark and CWT; actual production was 12,701,000 |
| FWS | Coleman NFH | Central Valley Late-fall Chinook | 2008 | 2008/Jan. 2009 | 1,000,000 | 0 | 0 | 0 | 1,000,000 | Y | General Production received 100% mark and CWT; actual production was 1,108,000 |
| FWS | Livingston Stone NFH | Sacramento River Winter Chinook | 2007 | Feb. 2008 | 200,000 | 0 | 0 | 0 | 200,000 | Y | 100% mark and CWT; actual production was 72,000 |
| Total Chinook | | | | | 4,200,000 | 0 | 0 | 9,000,000 | 13,200,000 | | |

Total Chinook Production 13,200,000
Total Percent Marked 32%

FWS SACRAMENTO RIVER 2007 CHINOOK MASS MARKING

12/28/2009

Species: Chinook
 Area: Sacramento River
 Brood: 2006 and 2007
 Release Year: 2007 and 2008
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments | |
|----------------------|----------------------|----------------------------------|------------|----------------------|--|-----------|---|------------------|---------------------------------------|-------------------------------|----------|--|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Coleman NFH | Central Valley Fall Chinook | 2006 | Apr. 2007 | 3,000,000 | 0 | 0 | 9,000,000 | 12,000,000 | Y | Y | General Production received 25% Constant-fractional mark and CWT; actual production was 12,316,000, including 200,000 fry that were 100% marked and CWT'd and released in March for a fish screen evaluation |
| FWS | Coleman NFH | Central Valley Late-fall Chinook | 2007 | Nov. 2007/Jan. 2008 | 1,000,000 | 0 | 0 | 0 | 1,000,000 | Y | Y | General Production received 100% mark and CWT; actual production was 1,061,000, including 78,000 fry that were 100% marked and CWT'd and released from May-June, 2007 at the request of researchers |
| FWS | Livingston Stone NFH | Sacramento River Winter Chinook | 2006 | Feb. 2007 | 200,000 | 0 | 0 | 0 | 200,000 | Y | Y | 100% mark and CWT; actual production was 196,000 |
| Total Chinook | | | | | 4,200,000 | 0 | 0 | 9,000,000 | 13,200,000 | | | |

Total Chinook Production 13,200,000
Total Percent Marked 32%

FWS SACRAMENTO RIVER 2006 CHINOOK MASS MARKING

12/28/2009

Species: Chinook
 Area: Sacramento River
 Brood: 2005 and 2006
 Release Year: 2006 and 2007
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|----------------------|----------------------|----------------------------------|------------|----------------------|--|-----------|---|-------------------|---------------------------------------|-------------------------------|----------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Central Valley Fall Chinook | 2005 | Apr. 2006 | 0 | 0 | 0 | 12,000,000 | 12,000,000 | Y | Y |
| FWS | Coleman NFH | Central Valley Late-fall Chinook | 2006 | Nov. 2006/Jan. 2007 | 1,000,000 | 0 | 0 | 0 | 1,000,000 | Y | Y |
| FWS | Livingston Stone NFH | Sacramento River Winter Chinook | 2005 | Feb. 2006 | 200,000 | 0 | 0 | 0 | 200,000 | Y | Y |
| Total Chinook | | | | | 1,200,000 | 0 | 0 | 12,000,000 | 13,200,000 | | |

General Production were not marked or tagged due to lack of funding; actual production was 13,355,000, including 200,000 fry that were 100% marked and CWT'd and released in March for a fish screen evaluation

General Production received 100% mark and CWT; actual production was 1,165,000, including 52,000 fry that were 100% marked and CWT'd and released from May-June, 2006 at the request of researchers 100% mark and CWT; actual production was 173,000

Total Chinook Production 13,200,000
Total Percent Marked 9%

FWS SACRAMENTO RIVER 2005 CHINOOK MASS MARKING

12/28/2009

Species: Chinook
 Area: Sacramento River
 Brood: 2004 and 2005
 Release Year: 2005 and 2006
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|----------------------|----------------------|----------------------------------|------------|----------------------|--|-----------|---|-------------------|---------------------------------------|-------------------------------|----------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Central Valley Fall Chinook | 2004 | Apr. 2005 | 0 | 0 | 0 | 12,000,000 | 12,000,000 | Y | Y |
| FWS | Coleman NFH | Central Valley Late-fall Chinook | 2005 | Dec. 2005/Jan. 2006 | 1,000,000 | 0 | 0 | 0 | 1,000,000 | Y | Y |
| FWS | Livingston Stone NFH | Sacramento River Winter Chinook | 2004 | Feb. 2005 | 200,000 | 0 | 0 | 0 | 200,000 | Y | Y |
| Total Chinook | | | | | 1,200,000 | 0 | 0 | 12,000,000 | 13,200,000 | | |

General Production were not marked or tagged due to lack of funding; actual production was 11,854,000, including 147,000 fry that were marked and CWTD and released February-March for a fish screen evaluation

General Production received 100% mark and CWT; actual production was 1,003,000, including 87,000 fry that were marked and CWTD and released from April-June, 2005 at the request of researchers

100% mark and CWT; actual production was 168,000

Total Chinook Production 13,200,000
Total Percent Marked 9%

FWS COLUMBIA RIVER 2010 COHO MASS MARKING

1/8/2010

Species: Coho
 Area: Columbia River
 Brood: 2009
 Release Year: 2011

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|------------------|-----------------------|--|------------------|---|----------------|------------------|---------------------------------------|-------------------------------|---|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 25,000 | 300,000 | 0 | 350,000 | Y | Y | CEDC Youngs Bay release |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 0 | 125,000 | 0 | 150,000 | Y | Y | Clear Cr. Release - NPT restoration |
| FWS | Eagle Creek NFH | Clearwater River - 1+ | 0 | 30,000 | 0 | 245,000 | 275,000 | N | N | Lapwai Cr. Release - NPT restoration |
| FWS | Eagle Creek NFH | Clearwater River - 1+ | 0 | 30,000 | 0 | 245,000 | 275,000 | N | N | Yakima R. Release - YN |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 0 | 425,000 | 50,000 | 500,000 | Y | Y | Wenatchee R. Release - YN restoration |
| FWS | Willard NFH | Wenatchee R. - 1+ | 0 | 550,000 | 0 | 0 | 550,000 | N | N | Wen. R. Rel. - (Tagged by FWS) YN restoration |
| ODFW | Cascade Hatchery | Wenatchee R. - 1+ | 0 | 700,000 | 0 | 0 | 700,000 | N | N | YN restoration program |
| FWS | Winthrop NFH | Wenatchee R. - 1+ | 0 | 250,000 | 0 | 0 | 250,000 | N | N | |
| Total Coho | | | 75,000 | 1,585,000 | 850,000 | 540,000 | 3,050,000 | | | |

Total Coho Production 3,050,000
Total Percent Marked 30%

FWS COLUMBIA RIVER 2009 COHO MASS MARKING

1/23/2009

Species: Coho
 Area: Columbia River
 Brood: 2008
 Release Year: 2010

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|------------------|------------------|--|------------------|---|----------------|------------------|---------------------------------------|-------------------------------|---|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 25,000 | 300,000 | 0 | 350,000 | Y | Y | CEDC Youngs Bay release |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 0 | 125,000 | 0 | 150,000 | Y | Y | Clear Cr. Release - NPT restoration |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 0 | 30,000 | 0 | 245,000 | 275,000 | N | N | Lapwai Cr. Release - NPT restoration |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 0 | 30,000 | 0 | 245,000 | 275,000 | N | N | Yakima R. Release - YN |
| FWS | Willard NFH | Wenatchee - 1+ | 0 | 550,000 | 0 | 0 | 450,000 | Y | Y | Wenatchee R. Release - YN restoration |
| ODFW | Cascade Hatchery | Wenatchee - 1+ | 0 | 700,000 | 0 | 0 | 700,000 | N | N | Wen. R. Rel. - (Tagged by FWS) YN restoration |
| FWS | Entiat NFH | Wenatchee - 1+ | 50,000 | 200,000 | 0 | 0 | 250,000 | N | N | YN restoration program |
| FWS | Winthrop NFH | Wenatchee - 1+ | 0 | 250,000 | 0 | 0 | 250,000 | N | N | YN restoration program |
| Total Coho | | | 100,000 | 1,785,000 | 875,000 | 490,000 | 3,250,000 | | | |

Total Coho Production 3,250,000
Total Percent Marked 30%

FWS COLUMBIA RIVER 2008 COHO MASS MARKING

1/15/2008

Species: Coho
 Area: Columbia River
 Brood: 2007
 Release Year: 2009

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|------------------|------------------|--|------------------|---|----------------|------------------|---------------------------------------|-------------------------------|---|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 25,000 | 350,000 | 0 | 400,000 | Y | Y | Potlatch R. Release - NPT restoration |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 30,000 | 30,000 | 0 | 215,000 | 275,000 | N | N | Lapwai Cr. Release - NPT restoration |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 30,000 | 30,000 | 0 | 215,000 | 275,000 | N | N | Yakima R. Release - YN |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 0 | 0 | 450,000 | 0 | 450,000 | Y | Y | Wenatchee R. Release - YN restoration |
| FWS | Willard NFH | Wenatchee - 1+ | 0 | 1,000,000 | 0 | 0 | 1,000,000 | N | N | Wen. R. Rel. - (Tagged by FWS) YN restoration |
| ODFW | Cascade Hatchery | Wenatchee - 1+ | 0 | 950,000 | 0 | 0 | 950,000 | N | N | YN restoration program |
| FWS | Entiat NFH | Wenatchee - 1+ | 0 | 200,000 | 50,000 | 0 | 250,000 | N | N | YN restoration program |
| FWS | Winthrop NFH | Wenatchee - 1+ | 0 | 500,000 | 0 | 0 | 500,000 | N | N | YN restoration program |
| FWS | Kooskia NFH | Dworshak - 1+ | 0 | 120,000 | 0 | 160,000 | 280,000 | N | N | NPT restoration program |
| Total Coho | | | 85,000 | 2,855,000 | 850,000 | 590,000 | 4,380,000 | | | |

Total Coho Production 4,380,000
Total Percent Marked 21%

FWS COLUMBIA RIVER 2007 COHO MASS MARKING

1/26/2007

Species: Coho
 Area: Columbia River
 Brood: 2006
 Release Year: 2008

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|------------------|------------------|--|------------------|---|----------------|------------------|---------------------------------------|-------------------------------|-----------------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | | |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 25,000 | 450,000 | 0 | 500,000 | Y | Y | Pollatch R. Release - NPT |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 60,000 | 60,000 | 0 | 155,000 | 275,000 | N | N | Lapwai Cr. Release - NPT |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 60,000 | 60,000 | 0 | 155,000 | 275,000 | N | N | Yakima R. Release - YN |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 0 | 0 | 500,000 | 0 | 500,000 | Y | Y | Wenatchee R. Release - YN |
| FWS | Willard NFH | Wenatchee - 1+ | 0 | 550,000 | 0 | 0 | 550,000 | N | N | Wen. R. Rel. - YN (Tagged by FWS) |
| ODFW | Cascade Hatchery | Wenatchee - 1+ | 0 | 700,000 | 0 | 0 | 700,000 | N | N | LV Clip - YN (Marked by FWS) |
| YN | Prosser Hatchery | Yakima - 1+ | 0 | 0 | 0 | 0 | 500,000 | N | N | YN restoration program |
| FWS | Winthrop NFH | Wenatchee - 1+ | 0 | 250,000 | 0 | 0 | 250,000 | N | N | NPT restoration program |
| FWS | Kooskia NFH | Dworshak - 1+ | 0 | 120,000 | 0 | 160,000 | 280,000 | N | N | |
| Total Coho | | | 145,000 | 1,765,000 | 950,000 | 970,000 | 3,830,000 | | | |

Total Coho Production 3,830,000
Total Percent Marked 29%

FWS COLUMBIA RIVER 2006 COHO MASS MARKING

2/6/2006

Species: Coho
 Area: Columbia River
 Brood: 2005
 Release Year: 2007

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|------------------|------------------|--|------------------|---|------------------|------------------|---------------------------------------|-------------------------------|-----------------------------------|
| | | | Ad Clipped | Unclassified | Ad Clipped | Unclassified | | | | |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 25,000 | 450,000 | 0 | 500,000 | Y | Y | Pollatch R. Release - NPT |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 50,000 | 50,000 | 0 | 175,000 | 275,000 | N | N | Lapwai Cr. Release - NPT |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 50,000 | 50,000 | 0 | 175,000 | 275,000 | N | N | Yakima R. Release - YN |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 0 | 0 | 600,000 | 0 | 600,000 | Y | Y | Wenatchee R. Release - YN |
| FWS | Willard NFH | Wenatchee - 1+ | 0 | 550,000 | 0 | 0 | 550,000 | N | N | Wen. R. Rel. - YN (Tagged by FWS) |
| ODFW | Cascade Hatchery | Wenatchee - 1+ | 0 | 700,000 | 0 | 0 | 700,000 | N | N | LV Clip - YN (Marked by FWS) |
| YN | Prosser Hatchery | Yakima - 1+ | 0 | 0 | 0 | 500,000 | 500,000 | N | N | YN restoration program |
| FWS | Winthrop NFH | Wenatchee - 1+ | 0 | 250,000 | 0 | 0 | 250,000 | N | N | NPT restoration program |
| FWS | Kooskia NFH | Dworshak - 1+ | 0 | 120,000 | 0 | 160,000 | 280,000 | N | N | |
| Total Coho | | | 125,000 | 1,745,000 | 1,050,000 | 1,010,000 | 3,930,000 | | | |

Total Coho Production 3,930,000
Total Percent Marked 30%

FWS COLUMBIA RIVER 2005 COHO MASS MARKING

4/27/2005

Species: Coho
 Area: Columbia River
 Brood: 2004
 Release Year: 2006

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|------------------|------------------|--|------------------|---|------------------|------------------|---------------------------------------|-------------------------------|-----------------------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 25,000 | 25,000 | 450,000 | 0 | 500,000 | Y | Y | Pollatch R. Release - NPT |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 50,000 | 50,000 | 0 | 175,000 | 275,000 | N | N | Lapwai Cr. Release - NPT |
| FWS | Eagle Creek NFH | Eagle Creek - 1+ | 50,000 | 50,000 | 0 | 175,000 | 275,000 | N | N | Yakima R. Release - YN |
| FWS | Willard NFH | Wenatchee - 1+ | 0 | 0 | 600,000 | 0 | 600,000 | Y | Y | Wenatchee R. Release - YN |
| ODFW | Cascade Hatchery | Wenatchee - 1+ | 300,000 | 300,000 | 0 | 0 | 600,000 | N | N | Wen. R. Rel. - YN (Tagged by FWS) |
| YN | Prosser Hatchery | Yakima - 1+ | 0 | 700,000 | 0 | 0 | 700,000 | N | N | LV Clip - YN (Marked by FWS) |
| FWS | Winthrop NFH | Wenatchee - 1+ | 0 | 200,000 | 0 | 0 | 500,000 | N | N | YN |
| FWS | Kooskia NFH | Dworshak - 1+ | 0 | 120,000 | 0 | 160,000 | 280,000 | N | N | NPT |
| Total Coho | | | 425,000 | 1,445,000 | 1,050,000 | 1,010,000 | 3,930,000 | | | |

Total Coho Production 3,930,000
Total Percent Marked 38%

FWS NORTH COAST AND PUGET SOUND 2010 COHO MASS MARKING

1/8/2010

Species: Coho
 Area: North Coast and Puget Sound
 Brood: 2009
 Release Year: 2011
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|--------------|-------|--|----------------|---|-----------|------------------|---------------------------------------|-------------------------------|-----------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Makah NFH | | 0 | 0 | 0 | 0 | 40,000 | Y | Y | Educket Creek program |
| FWS | Makah NFH | | 40,000 | 40,000 | 160,000 | 0 | 240,000 | Y | Y | |
| FWS | Quinault NFH | | 80,000 | 80,000 | 500,000 | 0 | 660,000 | Y | Y | |
| FWS | Quicene NFH | | 40,000 | 40,000 | 220,000 | 0 | 300,000 | Y | Y | |
| FWS | Quicene NFH | | 40,000 | 0 | 160,000 | 0 | 200,000 | Y | Y | Quilcene Bay Net Pens |
| Total Coho | | | 200,000 | 160,000 | 1,080,000 | 0 | 1,440,000 | | | |

Total Coho Production 1,440,000
Total Percent Marked 89%

FWS NORTH COAST AND PUGET SOUND 2009 COHO MASS MARKING

2/5/2009

Species: Coho
 Area: North Coast and Puget Sound
 Brood: 2008
 Release Year: 2010

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|--------------|--------------------|--|----------------|---|----------|------------------|---------------------------------------|-------------------------------|-----------------------|
| | | | Ad Clipped | Uncipped | Ad Clipped | Uncipped | | | | |
| FWS | Makah NFH | Sooes River | 0 | 0 | 0 | 40,000 | 40,000 | Y | Y | Educket Creek program |
| FWS | Makah NFH | Sooes River | 40,000 | 40,000 | 160,000 | 0 | 240,000 | Y | Y | |
| FWS | Quinault NFH | Cook Creek | 80,000 | 80,000 | 500,000 | 0 | 660,000 | Y | Y | |
| FWS | Quicene NFH | Big Quilcene River | 40,000 | 40,000 | 320,000 | 0 | 400,000 | Y | Y | |
| FWS | Quicene NFH | Big Quilcene River | 45,000 | 0 | 155,000 | 0 | 200,000 | Y | Y | Quilcene Bay Net Pens |
| Total Coho | | | 205,000 | 160,000 | 1,175,000 | 0 | 1,540,000 | | | |

Total Coho Production 1,540,000
Total Percent Marked 90%

FWS NORTH COAST AND PUGET SOUND 2008 COHO MASS MARKING

1/15/2008

Species: Coho
 Area: North Coast and Puget Sound
 Brood: 2007
 Release Year: 2009

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|--------------|--------------------|--|----------------|---|----------|------------------|---------------------------------------|-------------------------------|-----------------------|
| | | | Ad Clipped | Uncipped | Ad Clipped | Uncipped | | | | |
| FWS | Makah NFH | Sooes River | 0 | 0 | 0 | 40,000 | 40,000 | Y | Y | Educket Creek program |
| FWS | Makah NFH | Sooes River | 40,000 | 40,000 | 160,000 | 0 | 240,000 | Y | Y | |
| FWS | Quinault NFH | Cook Creek | 80,000 | 80,000 | 500,000 | 0 | 660,000 | Y | Y | |
| FWS | Quicene NFH | Big Quilcene River | 40,000 | 40,000 | 320,000 | 0 | 400,000 | Y | Y | |
| FWS | Quicene NFH | Big Quilcene River | 45,000 | 0 | 155,000 | 0 | 200,000 | Y | Y | Quilcene Bay Net Pens |
| Total Coho | | | 205,000 | 160,000 | 1,175,000 | 0 | 1,540,000 | | | |

Total Coho Production 1,540,000
Total Percent Marked 90%

FWS NORTH COAST AND PUGET SOUND 2007 COHO MASS MARKING

1/26/2007

Species: Coho
 Area: North Coast and Puget Sound
 Brood: 2006
 Release Year: 2008
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-------------------|--------------|----------|--|----------------|---|----------|------------------|---------------------------------------|-------------------------------|----------------------|
| | | | Ad Clipped | Uncipped | Ad Clipped | Uncipped | | | | |
| FWS | Makah NFH | Makah | 40,000 | 40,000 | 120,000 | 0 | 200,000 | Y | Y | |
| FWS | Makah NFH | Makah | 0 | 0 | 40,000 | 0 | 40,000 | Y | Y | Educket Cr. release |
| FWS | Quinault NFH | Quinault | 80,000 | 80,000 | 500,000 | 0 | 660,000 | Y | Y | |
| FWS | Quilcene NFH | Quilcene | 48,000 | 48,000 | 304,000 | 0 | 400,000 | Y | Y | |
| FWS | Quilcene NFH | Quilcene | 45,000 | 0 | 155,000 | 0 | 200,000 | Y | Y | Quilcene Bay release |
| Total Coho | | | 213,000 | 168,000 | 1,119,000 | 0 | 1,500,000 | | | |

Total Coho Production 1,500,000
Total Percent Marked 89%

FWS NORTH COAST AND PUGET SOUND 2006 COHO MASS MARKING

2/6/2006

Species: Coho
 Area: North Coast and Puget Sound
 Brood: 2005
 Release Year: 2007

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments | |
|-------------------|--------------|----------|--|----------------|---|----------|---------------------------------------|-------------------------------|----------|----------------------|
| | | | Ad Clipped | Uncipped | Ad Clipped | Uncipped | | | | Total Production |
| FWS | Makah NFH | Makah | 40,000 | 0 | 40,000 | 120,000 | 0 | 200,000 | Y | |
| FWS | Makah NFH | Makah | 0 | 0 | 0 | 40,000 | 0 | 40,000 | Y | Educket Cr. Release |
| FWS | Quinalt NFH | Quinalt | 80,000 | 0 | 80,000 | 500,000 | 0 | 660,000 | Y | |
| FWS | Quilcene NFH | Quilcene | 48,000 | 0 | 48,000 | 304,000 | 0 | 400,000 | Y | |
| FWS | Quilcene NFH | Quilcene | 45,000 | 0 | 0 | 155,000 | 0 | 200,000 | Y | Quilcene Bay Release |
| Total Coho | | | 213,000 | 168,000 | 1,119,000 | 0 | 1,500,000 | | | |

Total Coho Production 1,500,000
Total Percent Marked 89%

FWS NORTH COAST AND PUGET SOUND 2005 COHO MASS MARKING

4/27/2005

Species: Coho
 Area: North Coast and Puget Sound
 Brood: 2004
 Release Year: 2006

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments | |
|-------------------|--------------|----------|--|----------|---|------------------|---------------------------------------|-------------------------------|----------|----------------------|
| | | | Ad Clipped | Uncipped | Ad Clipped | Uncipped | | | | Total Production |
| FWS | Makah NFH | Makah | 40,000 | 0 | 40,000 | 170,000 | 0 | 250,000 | Y | |
| FWS | Makah NFH | Makah | 0 | 0 | 0 | 50,000 | 0 | 50,000 | Y | Educket Cr. Release |
| FWS | Quinalt NFH | Quinalt | 80,000 | 0 | 80,000 | 440,000 | 0 | 600,000 | Y | |
| FWS | Quinalt NFH | Quinalt | 0 | 0 | 0 | 60,000 | 0 | 60,000 | Y | Camp 7 Pond Release |
| FWS | Quilcene NFH | Quilcene | 48,000 | 0 | 48,000 | 304,000 | 0 | 400,000 | Y | |
| FWS | Quilcene NFH | Quilcene | 45,000 | 0 | 0 | 155,000 | 0 | 200,000 | Y | Quilcene Bay Release |
| Total Coho | | | 213,000 | 0 | 168,000 | 1,179,000 | 0 | 1,560,000 | | |

Total Coho Production 1,560,000
Total Percent Marked 89%

FWS COLUMBIA RIVER 2010 STEELHEAD MASS MARKING

1/8/2010

Species: Steelhead
 Area: Columbia River
 Brood: 2010
 Release Year: 2011

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-----------------|--------------|--|-----------|---|----------------|------------------|---------------------------------------|-------------------------------|--|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Eagle Creek NFH | Eagle Creek | 0 | 0 | 0 | 90,000 | 0 | Y | Y | ADRV clip |
| FWS | Winthrop NFH | Wells/methow | 100,000 | 0 | 0 | 100,000 | 0 | Y | Y | |
| FWS | Abermathy FTC | Abermathy | 20,000 | 0 | 0 | 20,000 | 0 | Y | Y | |
| FWS | Dworshak NFH | Dworshak | 180,000 | 0 | 2,000,000 | 0 | 2,180,000 | Y | Y | 1.2M Released On-station |
| FWS | Dworshak NFH | Dworshak | 0 | 0 | 0 | 220,000 | 220,000 | N | N | Lolo Cr., M. Fk. Clearwater R. Restoration |
| FWS | Hagerman NFH | Salmon River | 80,000 | 0 | 1,020,000 | 0 | 1,100,000 | Y | Y | Marked by IDFG |
| Total steelhead | | | 380,000 | 0 | 3,110,000 | 220,000 | 3,710,000 | | | |

Total Steelhead Production 3,710,000
Total Percent Marked 94%

FWS COLUMBIA RIVER 2009 STEELHEAD MASS MARKING

1/23/2009

Species: Steelhead
 Area: Columbia River
 Brood: 2009
 Release Year: 2010

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-----------------|--------------|--|----------------|---|-----------|---------------------------------------|-------------------------------|---|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Eagle Creek NFH | Eagle Creek | 0 | 0 | 100,000 | 0 | Y | Y | ADRV clip |
| FWS | Winthrop NFH | Wells/methow | 100,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Abermathy FTC | Abermathy | 20,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Dworshak NFH | Dworshak | 180,000 | 0 | 1,720,000 | 0 | Y | Y | 1.2M Released On-station |
| FWS | Dworshak NFH | Dworshak | 0 | 200,000 | 0 | 0 | N | N | Lolo Cr., Middle Fk. Cleanwater Release |
| FWS | Hagerman NFH | Salmon River | 80,000 | 0 | 1,020,000 | 0 | Y | Y | Marked by IDFG |
| Total steelhead | | | 380,000 | 200,000 | 2,840,000 | 0 | 0 | 3,420,000 | |

Total Steelhead Production 3,420,000
Total Percent Marked 94%

FWS COLUMBIA RIVER 2008 STEELHEAD MASS MARKING

1/15/2008

Species: Steelhead
 Area: Columbia River
 Brood: 2008
 Release Year: 2009

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-----------------|--------------|--|----------------|---|-----------|---------------------------------------|-------------------------------|---------------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Eagle Creek NFH | Eagle Creek | 0 | 0 | 100,000 | 0 | Y | Y | ADRV clip |
| FWS | Winthrop NFH | Wells | 0 | 0 | 100,000 | 0 | Y | Y | |
| FWS | Abernathy FTC | Abernathy | 20,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Dworshak NFH | Dworshak | 150,000 | 0 | 1,750,000 | 0 | Y | Y | 1.2M Released On-station |
| FWS | Dworshak NFH | Dworshak | 0 | 200,000 | 0 | 0 | N | N | S. Fk. Clearwater Release |
| FWS | Hagerman NFH | Salmon River | 80,000 | 0 | 1,120,000 | 0 | Y | Y | Marked by IDFG |
| Total steelhead | | | 250,000 | 200,000 | 3,070,000 | 0 | 0 | 3,520,000 | |

Total Steelhead Production 3,520,000
Total Percent Marked 94%

FWS COLUMBIA RIVER 2007 STEELHEAD MASS MARKING

1/26/2007

Species: Steelhead
 Area: Columbia River
 Brood: 2007
 Release Year: 2008

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-----------------|--------------|--|----------------|---|-----------|---------------------------------------|-------------------------------|---------------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Eagle Creek NFH | Eagle Creek | 0 | 0 | 0 | 0 | Y | Y | ADRV clip |
| FWS | Winthrop NFH | Wells | 100,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Abernathy FTC | Abernathy | 20,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Dworshak NFH | Dworshak | 120,000 | 0 | 1,880,000 | 0 | Y | Y | 1.2M Released On-station |
| FWS | Dworshak NFH | Dworshak | 0 | 200,000 | 0 | 0 | N | N | S. Fk. Clearwater Release |
| FWS | Hagerman NFH | Salmon River | 80,000 | 0 | 1,120,000 | 0 | Y | Y | Marked by IDFG |
| Total steelhead | | | 320,000 | 200,000 | 3,150,000 | 0 | 0 | 3,670,000 | |

Total Steelhead Production 3,670,000
Total Percent Marked 95%

FWS COLUMBIA RIVER 2006 STEELHEAD MASS MARKING

2/6/2006

Species: Steelhead
 Area: Columbia River
 Brood: 2006
 Release Year: 2007

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-----------------|--------------|--|----------------|---|------------|---------------------------------------|-------------------------------|---------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | |
| FWS | Eagle Creek NFH | Eagle Creek | 150,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Dworshak NFH | Dworshak | 120,000 | 0 | 1,780,000 | 0 | Y | Y | 1.2M Released On-station |
| FWS | Dworshak NFH | Dworshak | 0 | 200,000 | 0 | 0 | N | N | S. Fk. Clearwater Release |
| FWS | Hagerman NFH | Salmon River | 80,000 | 0 | 1,120,000 | 0 | Y | Y | |
| Total steelhead | | | 350,000 | 200,000 | 2,900,000 | 0 | 0 | 3,450,000 | |

Total Steelhead Production 3,450,000
Total Percent Marked 94%

FWS COLUMBIA RIVER 2005 STEELHEAD MASS MARKING

4/27/2005

Species: Steelhead
 Area: Columbia River
 Brood: 2005
 Release Year: 2006

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|---------------------------|-------------|--|----------------|---|------------|---------------------------------------|-------------------------------|---------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | |
| FWS | Eagle Creek NFH | Eagle Creek | 150,000 | 0 | 0 | 0 | Y | Y | |
| FWS | Dworshak NFH | Dworshak | 120,000 | 0 | 1,780,000 | 0 | Y | Y | 1.2M Released On-station |
| FWS | Dworshak NFH | Dworshak | 0 | 200,000 | 0 | 0 | N | N | S. Fk. Clearwater Release |
| IDFG | Clearwater Anad. Hatchery | Dworshak | 0 | 150,000 | 0 | 0 | N | N | Tagged by FWS |
| Total steelhead | | | 270,000 | 350,000 | 1,780,000 | 0 | 0 | 2,400,000 | |

Total Steelhead Production 2,400,000
Total Percent Marked 85%

FWS NORTH COAST AND PUGET SOUND 2010 STEELHEAD MASS MARKING

1/8/2010

Species: Steelhead
 Area: North Coast and Puget Sound
 Brood: 2010
 Release Year: 2011

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Total Production | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|--------------|---------------------|--|-----------|---|----------------|------------------|---------------------------------------|-------------------------------|------------------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | | |
| FWS | Makah NFH | Sooes River | 0 | 0 | 0 | 158,000 | 0 | Y | N | |
| FWS | Makah NFH | Sooes River | 0 | 0 | 0 | 22,000 | 0 | Y | N | Educket Cr. release |
| FWS | Quinault NFH | Cook Creek/Quinault | 20,000 | 0 | 0 | 170,000 | 0 | Y | N | |
| FWS | Quinault NFH | Cook Creek/Quinault | 10,000 | 0 | 0 | 40,000 | 0 | Y | Y | Hoh R. direct stream release |
| FWS | Quinault NFH | Cook Creek/Quinault | 10,000 | 0 | 0 | 40,000 | 0 | Y | Y | Chalaat Ck. transfer |
| Total Steelhead | | | 40,000 | 0 | 0 | 430,000 | 0 | | | |

Total Steelhead Production 470,000
Total Percent Marked 100%

FWS NORTH COAST AND PUGET SOUND 2009 STEELHEAD MASS MARKING

2/5/2009

Species: Steelhead
 Area: North Coast and Puget Sound
 Brood: 2009
 Release Year: 2010

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|--------------|---------------------|--|------------|---|------------|---------------------------------------|-------------------------------|------------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | |
| FWS | Makah NFH | | 0 | 0 | 158000 | 0 | Y | N | |
| FWS | Makah NFH | Sooes River | 0 | 0 | 22000 | 0 | Y | N | Educket Cr. release |
| FWS | Quinault NFH | Cook Creek/Quinault | 20,000 | 0 | 170000 | 0 | Y | N | |
| FWS | Quinault NFH | Cook Creek/Quinault | 10,000 | 0 | 40000 | 0 | Y | Y | Hoh R. direct stream release |
| FWS | Quinault NFH | Cook Creek/Quinault | 10,000 | 0 | 40000 | 0 | Y | Y | Chalaaat Ck. transfer |
| Total Steelhead | | | 40,000 | 0 | 430,000 | 0 | | | |

Total Steelhead Production 470,000
Total Percent Marked 100%

FWS NORTH COAST AND PUGET SOUND 2008 STEELHEAD MASS MARKING

1/15/2008

Species: Steelhead
 Area: North Coast and Puget Sound
 Brood: 2008
 Release Year: 2009

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-----------------------------------|-------------|--------------------|--|------------|---|----------------|---------------------------------------|-------------------------------|------------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | |
| FWS | Makah NFH | Sooes River | 0 | 0 | 0 | 158,000 | N | N | |
| FWS | Makah NFH | Sooes River | 0 | 0 | 0 | 22,000 | N | N | Educket Cr. release |
| FWS | Quinalt NFH | Cook Creek/Quinalt | 20,000 | 0 | 0 | 170,000 | N | N | |
| FWS | Quinalt NFH | Cook Creek/Quinalt | 10,000 | 0 | 40,000 | 0 | Y | Y | Hoh R. direct stream release |
| FWS | Quinalt NFH | Cook Creek/Quinalt | 10,000 | 0 | 40,000 | 0 | Y | Y | Chalaaat Ck. transfer |
| Total Steelhead | | | 40,000 | 0 | 80,000 | 350,000 | | | |
| Total Steelhead Production | | | | | | 470,000 | | | |
| Total Percent Marked | | | | | | | | | 26% |

FWS NORTH COAST AND PUGET SOUND 2007 STEELHEAD MASS MARKING

1/26/2007

Species: Steelhead
 Area: North Coast and Puget Sound
 Brood: 2007
 Release Year: 2008

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|-----------------------------------|-------------|---------|--|------------|---|----------------|---------------------------------------|-------------------------------|------------------------------|
| | | | Ad Clipped | Uncolipped | Ad Clipped | Uncolipped | | | |
| FWS | Makah NFH | Makah | 0 | 0 | 0 | 158,000 | N | Y | |
| FWS | Makah NFH | Makah | 0 | 0 | 0 | 22,000 | N | Y | Educket Cr. release |
| FWS | Quinalt NFH | Quinalt | 20,000 | 0 | 0 | 170,000 | N | Y | |
| FWS | Quinalt NFH | Quinalt | 10,000 | 0 | 40,000 | 0 | Y | Y | Hoh R. direct stream release |
| FWS | Quinalt NFH | Quinalt | 10,000 | 0 | 40,000 | 0 | Y | Y | Chalaaat Ck. transfer |
| Total Steelhead | | | 40,000 | 0 | 80,000 | 350,000 | | | |
| Total Steelhead Production | | | | | | | 470,000 | | |
| Total Percent Marked | | | | | | | | 26% | |

FWS NORTH COAST AND PUGET SOUND 2006 STEELHEAD MASS MARKING

2/6/2006

Species: Steelhead
 Area: North Coast and Puget Sound
 Brood: 2006
 Release Year: 2007

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-------------|---------|--|----------|---|----------------|---------------------------------------|-------------------------------|---------------------|
| | | | Ad Clipped | Uncipped | Ad Clipped | Uncipped | | | |
| FWS | Makah NFH | Makah | 0 | 0 | 0 | 158,000 | Y | Y | |
| FWS | Makah NFH | Makah | 0 | 0 | 0 | 22,000 | Y | Y | |
| FWS | Quinalt NFH | Quinalt | 20,000 | 0 | 0 | 170,000 | Y | Y | Educket Cr. Release |
| Total Steelhead | | | 20,000 | 0 | 0 | 350,000 | 0 | 0 | 370,000 |

Total Steelhead Production 370,000
Total Percent Marked 100%

FWS NORTH COAST AND PUGET SOUND 2005 STEELHEAD MASS MARKING

4/27/2005

Species: Steelhead
 Area: North Coast and Puget Sound
 Brood: 2005
 Release Year: 2006

| Agency | Hatchery | Stock | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|--------------|----------|--|-----------|---|-----------|---------------------------------------|-------------------------------|---------------------|
| | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Makah NFH | Makah | 0 | 0 | 175,000 | 0 | Y | Y | |
| FWS | Makah NFH | Makah | 0 | 0 | 25,000 | 0 | Y | Y | |
| FWS | Quinault NFH | Quinault | 20,000 | 0 | 170,000 | 0 | Y | Y | Educket Cr. Release |
| Total Steelhead | | | 20,000 | 0 | 370,000 | 0 | | | |

Total Steelhead Production 390,000
Total Percent Marked 100%

FWS SACRAMENTO RIVER 2010 STEELHEAD MASS MARKING

12/28/2009

Species: Steelhead
 Area: Sacramento River
 Brood: 2010
 Release Year: 2011
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-------------|------------------------|------------|----------------------|--|-----------|---|-----------|---------------------------------------|-------------------------------|----------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Battle Creek Steelhead | 2010 | Jan 2011 | 0 | 0 | 600,000 | 0 | Y | Y | |
| Total Steelhead | | | | | 0 | 0 | 600,000 | 0 | Y | Y | |

Total Steelhead Production 600,000
Total Percent Marked 100%

FWS SACRAMENTO RIVER 2009 STEELHEAD MASS MARKING

12/28/2009

Species: Steelhead
 Area: Sacramento River
 Brood: 2009
 Release Year: 2010
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-------------|------------------------|------------|----------------------|--|-----------|---|----------------|---------------------------------------|-------------------------------|-------------------------------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Battle Creek Steelhead | 2009 | Jan 2010 | 0 | 0 | 0 | 600,000 | Y | Y | Actual production was 594,000 |
| Total Steelhead | | | | | 0 | 0 | 0 | 600,000 | Y | Y | |

Total Steelhead Production 600,000
Total Percent Marked 100%

FWS SACRAMENTO RIVER 2008 STEELHEAD MASS MARKING

12/28/2009

Species: Steelhead
 Area: Sacramento River
 Brood: 2008
 Release Year: 2009
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-------------|------------------------|------------|----------------------|--|-----------|---|----------------|---------------------------------------|-------------------------------|-------------------------------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Battle Creek Steelhead | 2008 | Jan 2009 | 0 | 0 | 0 | 600,000 | Y | Y | Actual production was 667,000 |
| Total Steelhead | | | | | 0 | 0 | 0 | 600,000 | Y | Y | |

Total Steelhead Production 600,000
Total Percent Marked 100%

FWS SACRAMENTO RIVER 2007 STEELHEAD MASS MARKING

12/28/2009

Species: Steelhead
 Area: Sacramento River
 Brood: 2007
 Release Year: 2008

Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-------------|------------------------|------------|----------------------|--|-----------|---|----------------|---------------------------------------|-------------------------------|-------------------------------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Battle Creek Steelhead | 2007 | Jan 2008 | 0 | 0 | 0 | 600,000 | Y | Y | Actual production was 641,000 |
| Total Steelhead | | | | | 0 | 0 | 0 | 600,000 | | | |

Total Steelhead Production 600,000
Total Percent Marked 100%

FWS SACRAMENTO RIVER 2006 STEELHEAD MASS MARKING

12/28/2009

Species: Steelhead
 Area: Sacramento River
 Brood: 2006
 Release Year: 2007
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-------------|------------------------|------------|----------------------|--|-----------|---|----------------|---------------------------------------|-------------------------------|--------------------------------------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Battle Creek Steelhead | 2006 | Jan 2007 | 0 | 0 | 0 | 600,000 | Y | Y | Actual production was 673,000 |
| Total Steelhead | | | | | 0 | 0 | 0 | 600,000 | Y | Y | Actual production was 673,000 |

Total Steelhead Production 600,000
Total Percent Marked 100%

FWS SACRAMENTO RIVER 2005 STEELHEAD MASS MARKING

12/28/2009

Species: Steelhead
 Area: Sacramento River
 Brood: 2005
 Release Year: 2006
 Program Levels: Actual releases and marking levels may be somewhat higher or lower depending on actual rearing cycle.

| Agency | Hatchery | Stock | Brood Year | Approx. Release Date | Number of fish to be released with a CWT | | Number of fish to be released without a CWT | | Proposed to be marked this year (Y/N) | Marked in previous year (Y/N) | Comments |
|------------------------|-------------|------------------------|------------|----------------------|--|-----------|---|----------------|---------------------------------------|-------------------------------|-------------------------------|
| | | | | | Ad Clipped | Unclipped | Ad Clipped | Unclipped | | | |
| FWS | Coleman NFH | Battle Creek Steelhead | 2005 | Jan 2006 | 0 | 0 | 0 | 600,000 | Y | Y | Actual production was 607,000 |
| Total Steelhead | | | | | 0 | 0 | 0 | 600,000 | Y | Y | |

Total Steelhead Production 600,000
Total Percent Marked 100%

West Coast Hydrokinetic Energy Projects

| | Latest news | Next steps | Technology description | Footprint description |
|---|---|---|--|---|
| California | | | | |
| <p>Del Mar Landing Project (Sonoma County Water Agency)</p> <p>Study location is 14.3 sq nautical miles. Three miles off the coast of Sonoma County, in state waters. Water depths of 20-50 meters.</p> <p>P-13376 Updated: 3/15/2010 Preliminary permit issued 7/9/2009</p> | <p>Pilot project application targeted for July 2011. Submitted 6-month progress report in January 2010. Work continues.</p> | <p>Schedule of proposed activities due within 45 days of permit issuance.</p> | <p>Pilot project (5 mW or less). Looking at oscillating water column & buoy-type devices, including Pelamis.</p> | <p>In state waters. 14.3 square nm.</p> |
| <p>Fort Ross Project North (Sonoma County Water Agency)</p> <p>Study area is 10.4 square nm.</p> <p>P-13378 Updated: 3/15/2010 Preliminary permit issued 7/9/2009</p> | <p>Pilot project application targeted for July 2011. Submitted 6-month progress report in January 2010. Work continues.</p> | | | <p>10.4 square nm, in state waters.</p> |
| <p>Fort Ross South Project South (Sonoma County Water Agency)</p> <p>Study area is 15.3 square nm. In state waters off Sonoma County, near Fort Ross, 20-50 m deep.</p> <p>P-13377 Updated: 3/15/2010 Preliminary permit issued 7/9/2009</p> | <p>Pilot project application targeted for July 2011. Submitted 6-month progress report in January 2010. Work continues.</p> | | <p>Pilot project (2-5 MW)</p> | <p>Initially 2-5 MW; eventually 40-200 MW.</p> |
| <p>Green Wave Mendocino Wave Park</p> <p>Mendocino</p> <p>P-13053 Updated: 3/15/2010 Preliminary permit issued 5/1/09</p> | <p>FERC requested overdue progress report. GreenWave submitted progress report 2/4/2010. Plan to hold meetings in March 2010. Being assisted by Ocean Power Technology (OPT). FISH (Fishermen Interested in Safe Hydrokinetics) filed lawsuit against FERC for issuing preliminary permit for this project.</p> | | <p>10-100 Pelamis or OPT devices, total capacity of 100 MW</p> | <p>2.5 x 6.9 miles (study area), up to 2.6 miles offshore, 120-390 feet deep.</p> |

| | Latest news | Next steps | Technology description | Footprint description |
|--|--|-------------------|---|---|
| <p>Green Wave San Luis Obispo Wave Park</p> <p>Morro Bay</p> <p>P-13052 Updated: 3/15/2010</p> <p>Preliminary permit issued 5/7/09</p> | <p>FERC requested overdue progress report. GreenWave submitted progress report 2/4/2010. Plan to hold meetings in March 2010. Being assisted by Ocean Power Technology (OPT).</p> | | <p>10-100 Pelamis or OPT devices with a total capacity of 100 MW.</p> | <p>3.1 x 7.1 miles. 1-3.5 miles from shore, 90-360 feet deep.</p> |
| <p>Humboldt WaveConnect Project (PGE)</p> <p>Eureka/Samoa</p> <p>P-12779 Updated: 3/15/2010</p> <p>Preliminary permit issued 3/13/2008</p> | <p>PGE submitted draft license application 2/26/2010. Submitted NOI to file pilot project licence application, same date. FERC granted permission to initiate Section 106 consultation (National Historic Preservation Act). Yurok tribe and other tribes invited to participate in licensing process.</p> | | <p>10-20 buoys or other technology, 5 mW</p> | <p>10-20 buoys. 60-600 feet in depth. 2-3 miles from shore.</p> |
| <p>San Francisco Bay Tidal Energy Project (Golden Gate Energy)</p> <p>San Francisco Bay</p> <p>P-12585 Updated: 3/15/2010</p> <p>Preliminary permit issued 2/4/2010</p> | <p>The City of San Francisco compiled a notice of intervention and protest, citing environmental and process reasons. FERC granted preliminary permit. (Applicant previously had prelim permit for same site.)</p> | | <p>60 turbines/square mile, 1000 mW</p> | <p>60 turbines per square mile, located on sea floor. Footprint not specified.</p> |
| <p>Swave Catalina Green Wave Power Project (SARA, Inc.)*</p> <p>3/4 mile off west coast of Santa Catalina Island, Los Angeles County, between China Point and Ben Westin Point.</p> <p>P-13498 Updated: 3/15/2010</p> <p>Preliminary permit issued 9/15/2009</p> | <p>No action on FERC website since 9/15/2009</p> | | <p>10-40 SWAVE buoys mounted in a staggered array.</p> | <p>Buoys in water 225-300 feet deep. .875 nautical mile footprint. Undersea power cable to the city of Avalon. Located in essential fish habitat for groundfish, highly migratory species, and coastal pelagic species.</p> |

Oregon

| | Latest news | Next steps | Technology description | Footprint description |
|---|--|--|------------------------------------|--|
| <p>Coos Bay OPT Wave Park</p> <p>Coos Bay, OR</p> <p>P-12749 Updated: 3/15/2010</p> <p>Preliminary permit issued 3/9/2007</p> <p>PAD submitted</p> | <p>Submitted PAD 3/7/08. Filed progress report 9/03/09. Participated in various meetings; information-gathering. Applied for (subsequent) prelim permit 3/1/2010. (Old permit expiring).</p> | | <p>200-400 buoys, 100 mW</p> | <p>200-400 buoys in 3-6 rows parallel to the beach, 25-40 fm deep. Currently, 1 mile wide by 5 miles long; eventually smaller. 2.5 miles from shore.</p> |
| <p>Douglas County Project (Douglas County)</p> <p>Winchester Bay</p> <p>P-12743 Updated: 3/15/2010</p> <p>Preliminary permit issued 4/6/2007</p> <p>PAD submitted</p> | <p>Submitted six-month report 10/19/2009. Conducting wave tank modeling of different sites. Plan to file preliminary permit application (for second permit; first one expires after three years) in April 2010.</p> | | <p>One jetty-based structure</p> | <p>Varies from other proposed projects in that it is powered by wave-driven air currents created by infrastructure built into existing jetty; installed capacity of 3MW. Applying for 50-year license.</p> |
| <p>Oregon Coastal Wave Energy Project (Green Wave, TIDE)</p> <p>Nehalem, Rockaway, Garibaldi, Netarts, Nestucca, and Neskowin.</p> <p>P-13047 Updated: 3/15/2010</p> <p>Preliminary permit issued 5/23/2008</p> | <p>Filed six-month progress report Nov. 2, 2009. TIDE's partner, Columbia Energy Partners, had to withdraw. Seeking new ocean power developers.</p> | <p>TIDE must issue a new RFP. Not clear whether TIDE is going forward with this.</p> | <p>Buoys, 20-180 mW (total)</p> | <p>N/A</p> |
| <p>Principle Power Offshore Wind Project*</p> <p>Off Oceanside & Netarts, OR</p> <p>MMS project Updated: 3/23/2010</p> | <p>In 2008, Tillamook Intergovernmental Development Agency and Principle Power signed MOU for phased development off offshore wind plant. 11/24/08 - signed MOU with Tillamook PUD. Principle Power acquired WindFloat technology, "a novel floating support structure for large offshore wind turbines." Conducted hazard identification study.</p> | <p>Need MMS lease/license. Plan to begin Phase II expansion by 2012.</p> | <p>30 wind turbines, 5 MW each</p> | <p>Project will begin with a single WindFloat floating turbine (243 feet); eventually plan to expand to "an entire offshore wind farm, covering 12 to 15 square miles and capable of generating 150 to 200 megawatts."</p> |

| | Latest news | Next steps | Technology description | Footprint description |
|---|---|--|---|---|
| <p>Reedsport OPT Wave Park</p> <p>Reedsport</p> <p>P-12713 Updated: 3/15/2010</p> <p>Preliminary permit issued</p> <p>PAD submitted <i>Scoping deadline is May 10, 2010</i></p> | <p>Began discussions with property owner re leasing transmission cable route. Submitted license application 1/29/2010. Scoping process has begun. Conducting scoping meetings in April in Reedsport and Salem. Deadline for filing scoping comments is May 10, 2010.</p> | | <p>10 OPT PowerBuoys, in 3-4 rows.</p> | <p>2.5 miles off the coast near Reedsport, OR. Depth: 204-225'. Footprint: 0.25 sq. miles, sandy bottom. Project would also occupy 5 acres of Federal lands in or near the Oregon Dunes Recreation Area. Each PowerBuoy would have a diameter of 36 square feet and extend about 30 feet above the water.</p> |
| Washington | | | | |
| <p>Admiralty Inlet (Snohomish PUD)</p> <p>Admiralty Inlet, Puget Sound</p> <p>P-12690 Updated: 3/15/2010</p> <p>Preliminary permit issued 3/9/2007</p> <p>PAD submitted</p> | <p>Submitted PAD 1/31/08. Filed progress report in January 2010. In 12-09, submitted a NOI to file a Pilot License Application, draft pilot license application, and related documents.</p> | <p>Holding a technical meeting April 12, 2010 in Everett, WA.</p> | <p>Two 10-meter, 500 kW open-center turbines (OpenHydro Group), mounted on submerged foundations (underwater)</p> | <p>Bay/estuary habitat; 60-100 m deep; bottom is scoured pebbles and sand; much shipping & commercial traffic.</p> |
| <p>Deception Pass (Snohomish PUD)</p> <p>Deception Pass, Puget Sound</p> <p>P-12687 Updated: 3/15/2010</p> <p>Preliminary permit issued 3/1/2007</p> <p>PAD submitted</p> | <p>Submitted PAD 1/31/08. Conducting meetings and consultations with various communities, tribes, and agencies (including NMFS). Submitted preliminary permit application (for new permit; old permit expired) on March 2, 2010. Plans to move forward with Admiralty Inlet project first. Filed progress report in January 2010.</p> | <p>Snohomish PUD intends to pursue a pilot license to test the feasibility and impacts of a tidal energy deployment in Admiralty Inlet first, and then apply that learning to a tidal energy deployment in Deception Pass.</p> | <p>Turbines (type, number unknown), 3 mW</p> | <p>Bay/estuary habitat; 30 m deep; rocky seafloor; mainly recreational use.</p> |

| | Latest news | Next steps | Technology description | Footprint description |
|--|--|--|---|---|
| <p>Grays Harbor Ocean Energy and Coastal Protection (Washington Wave Co.)</p> <p>Grays Harbor</p> <p>P-13058 Updated: 3/15/2010</p> <p>Preliminary permit issued 7/31/08</p> | <p>Submitted six-month progress report in January.</p> | <p>Applicant plans to prepare NOI and PAD in spring/summer 2010.</p> | <p>12 oscillating water column units, 6MW (Eventually, wind turbines & buoys, 168-418 mW)</p> | <p>Up to 28 square miles. 1-3 miles offshore, 10-70 feet in depth. West of Ocean Shores and Westport.</p> |
| <p>Green Hydropower Grand Coulee Project (inland waters)*</p> <p>One quarter mile below Grand Coulee dam.</p> <p>P-13522 Updated: 3/15/2010</p> | <p>Applied for preliminary permit 6/19/09. FERC asked Bureau of Reclamation whether they believe a non-federal project is authorized at the site. BOR said they do not, and strongly oppose the project. No action since 9/09.</p> | | <p>One Sea Anchor Tidal Power device</p> | <p>An in-stream power device pilot project; device could potentially be used in saltwater applications as well.</p> |
| <p>Guemes Channel (Snohomish PUD)</p> <p>Guemes Channel, Puget Sound</p> <p>P-12698 Updated: 3/15/2010</p> <p>Preliminary permit issued 2/22/2007</p> <p>PAD submitted</p> | <p>Submitted PAD 1/31/08. Filed progress report in January 2010. Conducting meetings and consultations with various communities, tribes, and agencies (including NMFS).</p> | | <p>Turbines (type, number unknown), 3.5 mW</p> | <p>Bay/estuary habitat; 15 m. deep; gravel seafloor; commercial shipping traffic.</p> |
| <p>Spieden Channel (Snohomish PUD)</p> <p>Spieden Channel, Puget Sound</p> <p>P-12689 Updated: 3/15/2010</p> <p>Preliminary permit issued 2/22/2007</p> <p>PAD submitted</p> | <p>Submitted PAD 1/31/08. Filed progress report in January 2010. Conducting meetings and consultations with various communities, tribes, and agencies (including NMFS).</p> | | <p>Turbines (type, number unknown), 8.3 mW</p> | <p>Bay/estuary habitat; 80 m. deep; gravel seafloor; commercial fishing use (salmon)</p> |

| | | Latest news | Next steps | Technology description | Footprint description |
|--|--------------------|--------------------|--|----------------------------------|--|
| DEFUNCT PROJECTS | | | | | |
| California | | | | | |
| Centerville OPT Wave Energy Park | | | | | |
| Eureka | | | Permit surrendered 5/29/09 "to focus on Coos Bay & Reedsport projects." | 40-80 buoys, 20 mW | 7.025 square miles, 2.5 miles offshore. |
| P-13075 | Updated: 8/13/2009 | | | | |
| Defunct | 6/27/2008 | | | | |
| Fairhaven OPT Wave Power Project | | | | | |
| Eureka | | | Competing application in same location chosen over this one. | 40-80 buoys, 20+ mW | .5 mile wide by 4 miles long (n/s), 22-26 fm |
| P-12780 | Updated: 3/27/2008 | | | | |
| Defunct | | | | | |
| Humboldt County Wave Project (PGE) | | | | | |
| Trinidad | | | Preliminary permit surrendered. | Unspecified; 100 mW | Research area: 8 square miles; final size between 2-3 square miles. 20-40 fm (120-240 feet). 2-4 miles off shore |
| P-12753 | Updated: 3/19/2009 | | | | |
| Defunct | | | | | |
| Mendocino Wave Energy Project (Chevron) | | | | | |
| Fort Bragg | | | Application withdrawn 8/31/07. Apparently the "lengthy approval process" in California led Chevron to pursue an opportunity in Alaska instead. | Pelamis machines, 2-60 mW | Unknown |
| P-12806 | Updated: 1/15/2008 | | | | |
| Defunct | | | | | |
| Mendocino WaveConnect Project (PGE) | | | | | |
| Fort Bragg | | | According to NMFS, PG&E plans to cancel this project because the harbor was determined to be unsuitable (too dangerous) to barge big machinery back and forth. | Buoys or other technology, 40 mW | Research area: 68 square miles. 60-600 feet in depth. 0.5 to 6 miles from shore. |
| P-12781 | Updated: 5/21/2009 | | | | |
| Defunct | 3/13/2008 | | | | |

| | Latest news | Next steps | Technology description | Footprint description |
|--|---|--|---|--|
| <p>San Francisco Ocean Energy Project (Grays Harbor Ocean Energy)</p> <p>20-30 miles off the coast, west of San Francisco, on the Outer Continental Shelf, within the boundaries of the Gulf of the Farallones NMS. Not visible from shore.</p> <p>P-13308 Updated: 8/13/2009 <i>Defunct</i></p> | <p>Permit dismissed by FERC 4/17/09 because this is on the outer continental shelf and now under the jurisdiction of MMS.</p> | <p>Would continue under the jurisdiction of MMS, but MMS cannot issue leases in marine sanctuaries. "There will be no project unless the Sanctuary managers decide to allow it and develop their own regulatory system, which seems unlikely."</p> | <p>100 WECs; may also use wind turbines on the WECs. May use oscillating water column technology.</p> | <p>Seafloor is sand, gravel, and mud. Considering using structures as artificial reefs.</p> |
| <p>Sonoma Coast Hydrokinetic Energy (Sonoma Co.)</p> <p>Sonoma Co.</p> <p>P-13076 Updated: <i>Defunct</i></p> | <p>Rejected - area too large, technology not specified.</p> | | <p>?</p> | <p>N/A</p> |
| Oregon | | | | |
| <p>Columbia River project (Oregon Tidal Energy Co.)</p> <p>Lower Columbia River</p> <p>P-12672 Updated: 3/27/2008 <i>Defunct</i></p> | <p>Preliminary permit surrendered - "insufficient development potential exists for either a full development or tidal project."</p> | | <p>TISECs</p> | <p>River bottom.</p> |
| <p>Coos County Wave Project (Finavera)</p> <p>Bandon</p> <p>P-12752 Updated: 6/2/2008 <i>Defunct</i> 4/26/2007</p> | <p>Permit cancelled 6/26/08 because no progress report or PAD was filed.</p> | | <p>Buoys, 100-300 mW</p> | <p>5.5 square mile water footprint, 1.6 miles e/w by 3.4 miles n/s.</p> |
| <p>Florence Wave Park Project (Energetech)</p> <p>Florence</p> <p>P-12793 Updated: 3/27/2008 <i>Defunct</i></p> | <p>Proposal withdrawn - no reason given.</p> | | <p>Oscillating water column technology, 10 mW</p> | <p>Each structure's footprint is 35x15 meters, not counting cables. Structures extend 7 meters above water and 15 below.</p> |

| | Latest news | Next steps | Technology description | Footprint description |
|--|---|-------------------|---|--|
| Lincoln County Wave Energy Research & Demonstration Center (Lincoln Co.) Lincoln County P-12727 Updated: 5/5/2008 <i>Defunct</i> | Dismissed by FERC | | Various. | Unknown |
| Newport OPT Wave Park Newport/ Waldport P-12750 Updated: 5/21/2009 <i>Defunct</i> | Preliminary permit surrendered 4/15/2009 in order to focus on Coos Bay and Reedsport projects. | | 200-400 buoys, 100+ mW | 200-400 buoys in 3-6 rows parallel to the beach. 3.5 miles wide (e/w) by 5 miles long (n/s); eventually as little as 0.4 miles by 3.1 miles, 20-35 fm, 3-6 miles off coast of Lincoln County |
| Washington | | | | |
| Agate Passage (Snohomish PUD) Agate Passage, Puget Sound P-12691 Updated: 5/21/2009 <i>Defunct</i> PAD submitted | Surrendered preliminary permit 10/07/08 | Defunct | Turbines (type, number unknown), 0.4 mW | Bay/estuary habitat; 10 m. deep; sand/gravel floor; used by pleasure craft |
| Green Hydropower Chief Joseph Project (inland waters) Just below Chief Joseph dam near Highway 17 bridge (salmon habitat) P-13525 Updated: 10/5/2009 <i>Defunct</i> | Applied for preliminary permit 6/19/09. Application withdrawn January 2010. | | One Sea Anchor Tidal Power device | An in-stream power device pilot project; device could potentially be used in saltwater applications as well. In salmon habitat. |
| Green Hydropower Rocky Reach Project (inland waters) On the Columbia River just below the Rocky Reach dam. (Salmon habitat) P-13534 Updated: 10/5/2009 <i>Defunct</i> | Application for preliminary permit submitted 7/07/09. Revised application submitted 8/17/09. Motion to intervene by WDFW. Application withdrawn Jan 2010. | | One Sea Anchor Tidal Power device | An in-stream power device pilot project; device could potentially be used in saltwater applications as well. In salmon habitat. |

| | Latest news | Next steps | Technology description | Footprint description |
|--|--|--|---|--|
| Makah Bay Offshore Wave Energy Pilot Project (Finavera) Makah Bay (Neah Bay) DI02-3 Updated: 2/11/2009 <i>Defunct</i> | Five-year license issued December 21, 2007. Finavera withdrew project in order to focus on wind energy. | | 1 buoy, 1 mW | 60x240 feet at ocean surface; 625x450 feet at ocean floor. Sandy bottom with rocky outcroppings. |
| Rich Passage (Snohomish PUD) Rich Passage, Puget Sound P-12688 Updated: 5/21/2009 <i>Defunct</i> PAD submitted | Surrendered preliminary permit 10/7/08. | Defunct. | Turbines (type, number unknown), 1.4 mW | Bay/estuary habitat; 15-22 m deep; gravel seafloor; commercial & naval traffic. |
| San Juan Channel (Snohomish PUD) San Juan Channel, Puget Sound P-12692 Updated: 10/5/2009 <i>Defunct</i> 2/22/2007 PAD submitted | Surrendered permit for this site - not feasible. | Plan to submit draft license application in January 2010. | Turbines (type, number unknown), 6.8 mW | Bay/estuary habitat; 135+ m. deep; gravel seafloor; commercial fishing use (salmon) |
| Tacoma Narrows (Tacoma Power) Tacoma Narrows, Puget Sound P-12612 Updated: 2/18/2009 <i>Defunct</i> | Doing feasibility studies. Issued progress report 7/30/08. Found that tidal power in Tacoma Narrows may not be economically or technically feasible at this time. Independent analysis underway, but permit will probably expire with no further action. | Prelim permit issued 2/22/06; expressed intent to use pilot process; but now looks unfeasible. | Up to 64 turbines, 1-20 mW | In estuary (HAPC). Footprint unknown. |
| Willapa Bay Tidal Energy Plant Water Power Project (Natural Currents) Willapa Bay P-12729 Updated: 8/13/2009 <i>Defunct</i> | Permit canceled because applicant did not file NOI and draft permit application. | | 1-3 turbines (Red Hawk-2), 1-2 mW | 825 meters SSW of State Road 105, 365 m offshore. Footprint unknown. Estuarine habitat. Aiming for installation in 2010. |

| | Latest news | Next steps | Technology description | Footprint description |
|---|---|---|---|---|
| DEFUNCT PROJECTS | | | | |
| California | | | | |
| <p>San Francisco Oceanside Wave Energy Project (City and County of S.F.)</p> <p>Eight miles west of San Francisco in the "exclusion zone" of the Monterey Bay National Marine Sanctuary (the area excluded from the sanctuary), near the outfall of a waste water treatment plant (therefore minimizing project impacts).</p> <p>P-13779 Updated: 10/5/2009</p> <p><i>On hold (MMS project)</i></p> | <p><No change since August report.> FERC dismissed application 4/30/09 because it is on the outer continental shelf and MMS now has jurisdiction.</p> | <p>Applicant must get a lease from MMS first, and then apply for a FERC license.</p> | <p>Not yet determined. Looking at several fully submerged devices.</p> | |
| <p>Ventura Ocean Energy Project (Grays Harbor Ocean Energy)</p> <p>20-25 miles off the coast, on the Outer Continental Shelf (but elsewhere in the application it says 5-10 miles offshore). Not visible from shore.</p> <p>P-13309 Updated: 10/5/2009</p> <p><i>On hold (MMS project)</i></p> | <p><No changes since August report.> Permit dismissed by FERC 4/17/09 because this is on the outer continental shelf and now under the jurisdiction of MMS.</p> | <p>Project currently on hold or defunct because of change to FERC rules. No indication on their website of pursuing project under MMS. Would have to get MMS lease and then re-apply to FERC.</p> | <p>100 WECs; may also use wind turbines on the WECs. May use oscillating water column technology.</p> | <p>Seafloor is sand, gravel, and mud. Considering using structures as artificial reefs.</p> |

DEFUNCT PROJECTS

Informational Briefing:

Scientific Uncertainty Buffers, Amendment 23 Technicalities, and Agenda Item 1.2

**Pacific Fishery Management Council
April, 2010**

Presentation Outline

- **Background: Why is the Council Considering This New Level of Complexity?**
- **March Council Meeting questions:**
 - **What is Sigma (σ) and What Role Does It Play?**
 - **What is P* and How Does It Work?**
 - **What are Some Actual Examples?**
 - **Effect of P* Buffers for Black Rockfish, Sablefish, Lingcod, and Other Species**
 - **How Do Old OYs Compare to *P Values?**
- **What is Coming Under Agenda Item 1.2?**

Why Are We Doing This?

- **The Re-authorized MSA Contains New Requirements to End Overfishing**
- **New NS1 Guidelines Implementing the Mandate Entail a New Harvest Specification Framework, Which Requires an FMP Amendment (Groundfish FMP Amendment 23)**
- **FMP Amendment Approval and Implementation Mandated by 2011**

New Terminology

| 2009-10 Harvest Specification Framework | | Am. 23 Harvest Specification Framework | |
|---|---|--|---|
| ABC | Overfishing Limit | OFL | Overfishing Limit |
| | Buffer accommodates scientific uncertainty, management uncertainty, socioeconomic concerns, rebuilding concerns, etc. | ABC | Buffer accommodates scientific uncertainty |
| OY | | ACL | Buffer accommodates management uncertainty, socioeconomic concerns, rebuilding concerns, etc. |
| | Buffer accommodates ad hoc sector allocations and other management objectives | | Buffer could accommodate inseason catch monitoring uncertainty, ad hoc sector allocations and other management objectives |
| HG | | ACT | |

Which of the Metrics are Science Determinations vs. Policy Determinations?

SSC Scientific Determinations To Be Approved by the Council

- OFL
- Part of the ABC: Quantification of Assessment Variance ($\sigma = 0.36$)
- Species or Stock Categorization Based On The Amount and Quality of Data Informing Harvest Specifications (Category 1, 2, or 3)

Council Policy Determinations

- Part of the ABC: Size of Scientific Uncertainty Buffer For All Three Categories of Stocks Based on a Risk Assessment
- P^* : Overfishing Probability (P^*) is a Risk Assessment Metric

New Regime Implementation Mandated by 2011

- **2011-12 Biennial Specifications Decided in a Three Council Meeting Process (November, April, June)**
 - **OFLs and Range of ABCs and ACLs Tentatively and Ideally Adopted in November**
 - **April:**
 - **Final Adoption of OFLs, ABCs, and ACLs (PPA for Overfished Species Under Agenda Items I.4 and I.6)**
 - **Preliminary Mgmt Measures , PPA for Further Analysis (Agenda Items I.4 and I.6)**
 - **June: Final Action**
- **Amendment 23 Scheduled for Final Action at the June Council Meeting**

March Council Meeting Questions

- **What Exactly is Sigma (σ)?**
- **What is P^* , and How Does it Work?**
- **What are Some Actual Examples?**
 - Effect of P^* buffers for Black Rockfish, Sablefish, Lingcod, Blue Rockfish, Chilipepper, etc.
- **How Do Old OYs Compare to $*P$ Values?**
 - What P^* Would the Old OYs Correspond To?
- **Does the New System Result in Significantly Different Catch Levels Than Under the Old System?**

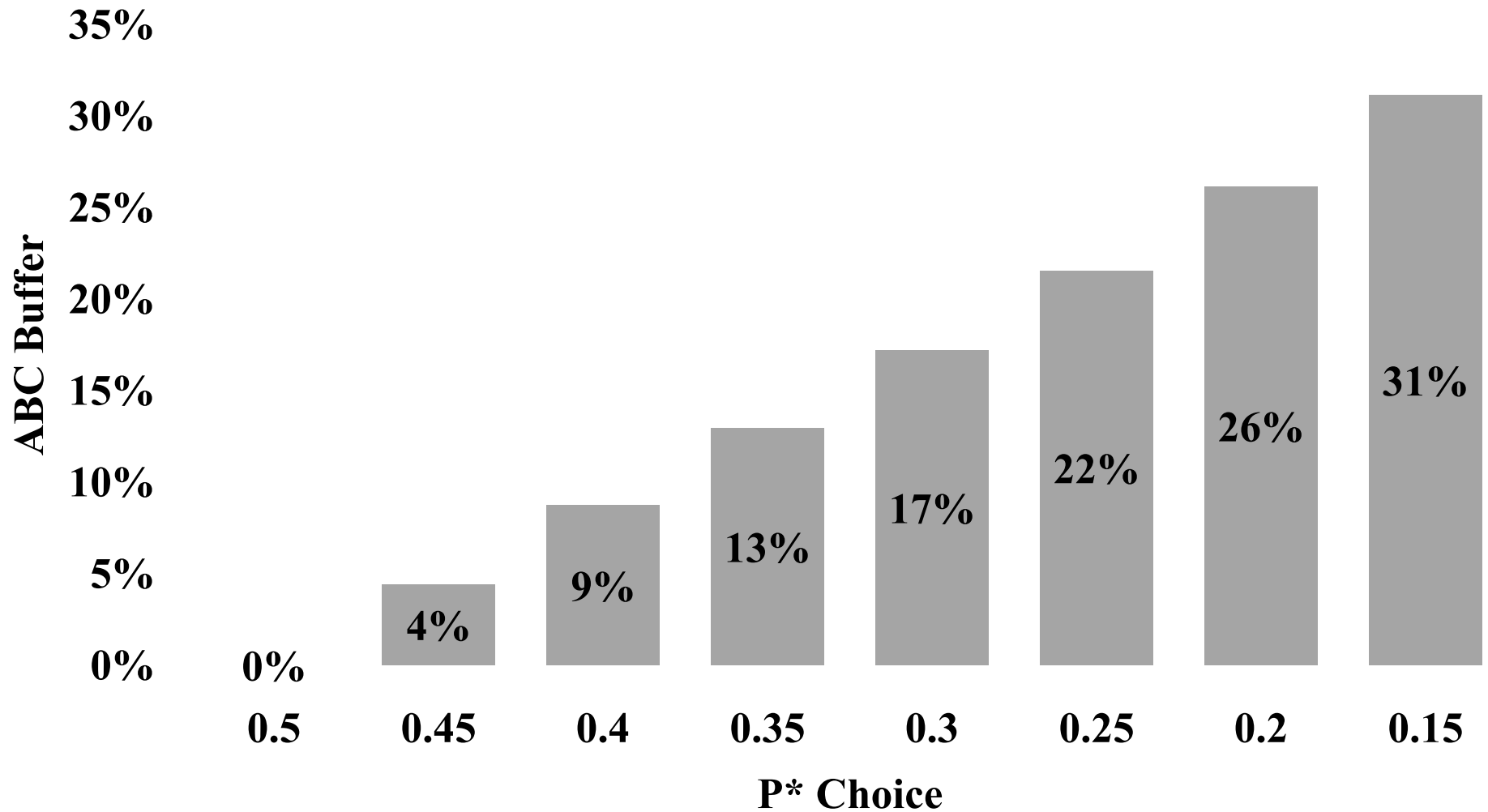
What Exactly Is Sigma (σ)?

- **The Scientific Uncertainty Buffer has Two Parts:**
 - **Scientific Variability between Stock Assessments**
 - **Probability the OFL Point Estimate is Wrong**
- **σ is the Quantification of Stock Assessment Variability**
- **The SSC has Determined $\sigma = 0.36$ for Category 1 Groundfish Stocks**

What is P^* and How Does It Work?

- **The Scientific Uncertainty Buffer has Two Parts:**
 - Scientific Variability between Stock Assessments (σ)
 - Overfishing Probability (P^*)
- **(P^*) is an Overfishing Risk Assessment Metric**
 - Choosing a P^* Completes the Calculation of the Scientific Uncertainty Buffer, the Gap between OFL and ABC
 - Probability of Exceeding the OFL Given the Variability Between Stock Assessments (σ)

ABC Buffers Under Varying P* Levels Given $\sigma = 0.36$



Black Rockfish North

| 2009-10 Harvest Specification Framework | | Am. 23 Harvest Specification Framework | |
|---|-----|--|------------------------------|
| ABC | 445 | OFL | 445 |
| OY | 445 | ABC | 426 (assuming $P^* = 0.45$) |
| | | ACL | 426 (assuming $ACL = ABC$) |
| HG | NA | ACT | NA |

Chilipepper Rockfish

| 2009-10 Harvest Specification Framework | | Am. 23 Harvest Specification Framework | |
|---|---|--|---|
| ABC | 2,229 | OFL | 2,229 |
| OY | 2,118 (assuming same 5% reduction from the ABC used in 2009 and 2010) | ABC | 2,130 (assuming $P^* = 0.45$) |
| | | ACL | 2,024 (assuming same 5% reduction from the ABC used in 2009 and 2010) |
| HG | NA | ACT | NA |

Black Rockfish OR-CA

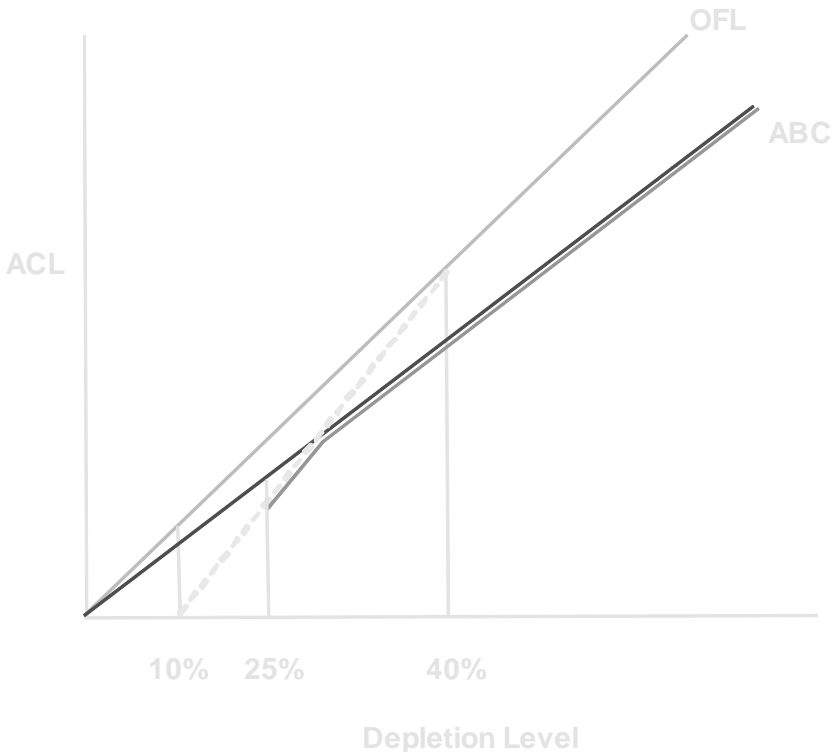
| 2009-10 Harvest Specification Framework | | Am. 23 Harvest Specification Framework | |
|---|---|--|---|
| ABC | 1,217 | OFL | 1,217 |
| OY | 1,000 (assuming same constant catch scenario used in 2009 and 2010) | ABC | 1,163 (assuming $P^* = 0.45$) |
| | | ACL | 1,000 (assuming same constant catch scenario used in 2009 and 2010) |
| HG | 580 (OR), 420 (CA) | ACT | 580 (OR), 420 (CA) (assuming same catch sharing as in 2009 and 2010) |

Lingcod - Coastwide

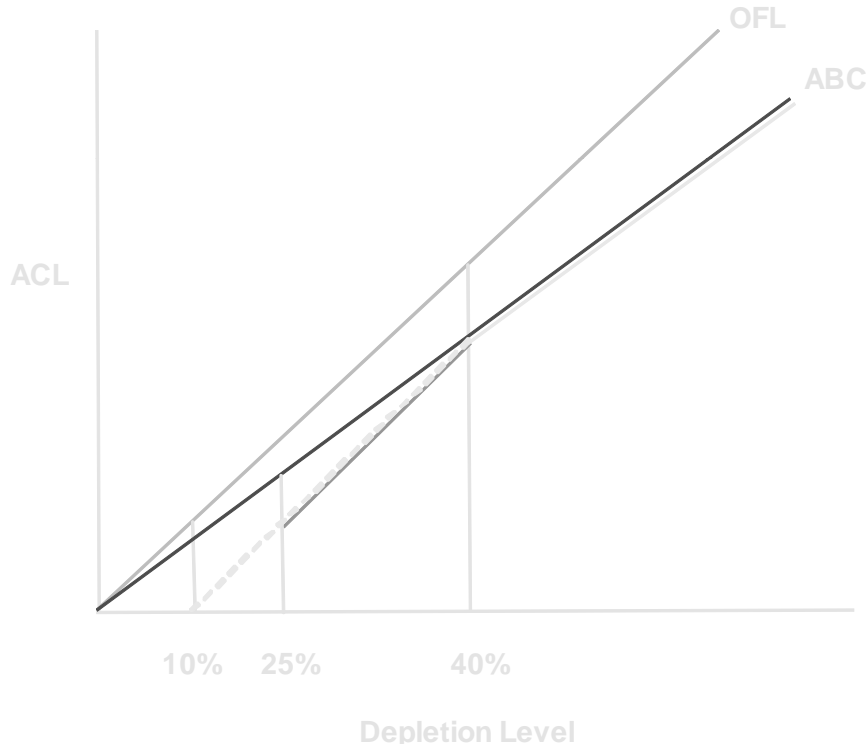
| 2009-10 Harvest Specification Framework | | Am. 23 Harvest Specification Framework | |
|---|-------|--|--------------------------------|
| ABC | 4,961 | OFL | 4,961 |
| OY | 4,961 | ABC | 4,742 (assuming $P^* = 0.45$) |
| | | ACL | 4,742 (assuming ACL = ABC) |
| | NA | | NA |
| HG | | ACT | |

Options for the 40-10 Control Rule

Option 1



Option 2



Sablefish 40-10 Example (2011)

| | | | | | | | |
|------------|------------------------------|-------|-------|-------|-------|-------|-------|
| OFL (mt) | 8,808 | | | | | | |
| Depletion | 36.0% | | | | | | |
| | Overfishing Probability (P*) | | | | | | |
| | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.20 | 0.15 |
| ABC (mt) | 8,418 | 8,040 | 7,667 | 7,293 | 6,909 | 6,506 | 6,065 |
| Opt. 1 ACL | 8,485 | | | | | | |
| Opt. 2 ACL | 7,296 | 6,968 | 6,645 | 6,321 | 5,988 | 5,639 | 5,256 |

Sablefish - Coastwide

| 2009-10 Harvest Specification Framework | | Am. 23 Harvest Specification Framework | |
|---|--|--|--|
| ABC | 8,808 | OFL | 8,808 |
| | 6,109 N; 1,188 S (assumes modified Alt. 5, i.e., option 1 40-10 adj., the same apportionment of the coastwide 40-10 adjusted OY, and a 50% precautionary adjustment in the S as was done in 2009 and 2010) | ABC | 8,418 (assuming $P^* = 0.45$) |
| | | | 5,253 N; 2,043 S (assumes modified Alt. 5, i.e., option 2 40-10 adj. (PPA under Am. 23), the same apportionment of the coastwide 40-10 adjusted OY as was done in 2009 and 2010, <u>without</u> a 50% precautionary adjustment in the S) |
| OY | | ACL | |
| HG | NA | ACT | NA |

Considerations for Setting Scientific Uncertainty Buffers

- **P* Approach Has Only Been Considered Up to This Point for Category 1 Stocks**
- **Buffers Should be Progressively Larger for Category 2 and 3 Stocks Due to Greater Scientific Uncertainty**
- **Buffers of 25% and 50% of OFLs for Category 2 and 3 Stocks, Respectively Have Been Proposed But Are Not Mandated**
- **$P^* \leq 0.2$ Determines Buffers $\geq 26\%$ Given $\sigma = 0.36$**

Comparing Approaches for Setting Harvest Specifications

- In General, Scientific Uncertainty Was Taken Into Account When Setting OYs Under the Old Framework**
- The Amendment 23 Framework Takes Scientific Uncertainty Into Account When Setting the ABC**

How Do Old OYs Compare to *P Values?

An Example Using Southern Black Rockfish

- The 2010 ABC and OY for Black Rockfish off CA and OR Are 1,317 mt and 1,000 mt, Respectively**
- Therefore, the 2010 OY is 76% of the ABC**
- Assuming the 2010 OY was an “ABC” Under the New Am. 23 Framework, the Scientific Uncertainty Buffer Would be 24% of the “OFL”**
- A 24% Buffer Would Equate to a P* of ~0.225**

What Council Tasks are Coming Under Agenda Item I.2?

- **Adopt SSC-Recommended OFLs**
- **Adopt P* and ABC for Cat. 1 Stocks (Non-Overfished)**
- **Adopt Cat. 2 and 3 ABC Buffers**
- **Adopt ACLs for Non-Overfished Species**
 - **Option 1 or Option 2 40-10 Harvest Control Rules?**
 - **ACL Alts. In Tables 2-2 a & b with *Bold Italics* May Have Scientific Uncertainty Adjustments Incorporated, Potentially Double Counted**

Issues and Considerations for Setting 2011-12 ACLs

- **Lingcod**
 - Coastwide or Area-Specific Specifications?
 - Alt. 1 has Scientific Uncertainty Adjustment
- **Sablefish**
 - P* for Coastwide ABC
 - Option 1 or 2 40-10 Adjustment ?
 - Alts. 2, 3 & 5 have Sci. Unc. Adjustment in South
- **Chilipepper**
 - 2009-10 Spex Were Incorrectly Applied in the South (Assessment for CA & OR)
 - Ave. 1998-2008 Catch in South was 94%

ACL Considerations (Cont.)

- **Splitnose**
 - Manage with Stock-Specific Specifications or in the Slope Rockfish Complexes (SQ is Stock-Specific ABC & OY in S and Within Complex in N)
 - Contributes ~58% of Minor Slope Rockfish North Complex ACL
- **Shortspine Thornyhead**
 - Set Coastwide OFLs/ABCs and Area-Specific ACLs
 - Alt. 1 ACL has Sci. Unc. Adj. in South

ACL Considerations (Cont.)

- **Longspine Thornyhead**
 - Set Coastwide OFLs/ABCs and Area-Specific ACLs
 - Alt. 1 ACL has Sci. Unc. Adj. in North and South
- **Greenstriped**
 - Manage with Stock-Specific Specifications or in the Shelf Rockfish Complexes
 - Contributes 56% to N Shelf Complex and ~10% to S Shelf Complex

ACL Considerations (Cont.)

- **Starry Flounder**
 - Alt. 1 ACL has Sci. Unc. Adj.
- **Other Fish Complex Specifications are Problematic**
- **General Considerations**
 - ACLs Can be Set Equal to ABCs for Non-Overfished Species Since Scientific Uncertainty Buffers are Incorporated in ABCs
 - Exceptions are Overfished Species and Precautionary Zone Species (i.e., Sablefish and Blue RF) Under the Option 2 40-10 Adj.