

## HABITAT COMMITTEE REPORT ON CURRENT HABITAT ISSUES

The Habitat Committee (HC) received updates on hydrokinetic energy developments and the status of the Essential Fish Habitat (EFH) Review Committee. The HC will provide comments on the report on the Sacramento salmon decline and the Draft Biological Opinion on the California Water Projects under those agenda items.

### **Hydrokinetic Energy**

The HC continues to track hydrokinetic energy proposals and staff maintains a database of the status of proposals (attached).

The Reedsport wave energy project by Ocean Power Technology is finalizing its settlement agreement and expects to install its first of 10 buoys in 2010. The first buoy will be a test buoy generating power, but not transmitting it to shore. The settlement process provides for a license term of 35 years.

The proposed OPT 200-buoy project in Coos Bay will begin its settlement process soon with proposed buoy placement in 2011.

The Minerals Management Service (MMS) announced that it will initiate a study on the effects of electromagnetic fields on fish and marine mammals.

Finavera has dropped their wave energy proposals throughout the west coast and focus on wind energy. This terminates, among other projects, the Makah project in Washington.

On March 17 MMS and the Federal Energy Regulatory Commission (FERC) published a joint statement, with a memorandum of understanding soon to follow, regarding permitting authority for projects.

The California Energy Commission recently published a report on wave energy that deals with both the socio-economic and environmental effects of wave energy projects.

### **Groundfish EFH Review Committee (EFHRC)**

The HC heard an update about the EFHRC's Terms of Reference. The HC expects to provide additional comments on EFH proposals in June.

The HC recommends that the Council direct the EFHRC, as a part of their current charge, to draft a schedule (for Council review) of the five-year review process. This will assure adequate time to gather and analyze new information and receive and review proposals for changes to EFH from advisory groups, agencies, and other partners.

## West Coast Hydrokinetic Energy Projects

	Location	Latest news	Next steps	Technology description	Footprint description
<b>California</b>					
<b>Centerville OPT Wave Energy Park</b> P-13075      Updated: 3/19/2009 Preliminary permit issued 6/27/2008	Eureka	Progress report submitted 11/08. Meeting with Hoopa tribe, agencies, stakeholders. No activity on FERC site since Nov 2008.	Plans to file NOI/PAD in May 2009.	40-80 buoys, 20 mW	7.025 square miles, 2.5 miles offshore.
<b>Del Mar Landing Project (Sonoma County Water Agency) (NEW)*</b> P-13376      Updated: 3/19/2009	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.	Applied for preliminary permit 2/23/09.	Waiting for approval of preliminary permit.	Looking at oscillating water column & buoy-type devices, including Pelamis.	
<b>Fort Ross Project North (Sonoma County Water Agency) (NEW)*</b> P-13378      Updated: 3/19/2009	Study area is 10.4 square nm.	Applied for preliminary permit 2/23/09			
<b>Fort Ross South Project South (Sonoma County Water Agency) (NEW)*</b> P-13377      Updated: 3/19/2009	Study area is 15.3 square nm. In state waters off Sonoma County, near Fort Ross, 20-50 m deep. Initially 2-5 MW; eventually 40-200 MW.	Applied for preliminary permit 2/23/09. No additional information available on FERC website.	Awaiting approval of preliminary permit application.		Initially 2-5 MW; eventually 40-200 MW.

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<b>Green Wave Mendocino Wave Park*</b>		Mendocino	Preliminary permit accepted for filing and comment 12/08. Motions to intervene from NMFS, PGE, Sierra Club, several fishing associations & communities. Many comments. No longer on FERC website, possibly due to technical error.	Waiting for preliminary permit.	Buoys or other technology, 5 mW	2.5 x 6.9 miles (study area), up to 2.6 miles offshore, 120-390 feet deep.
P-13053	Updated: 2/18/2009					
<b>Green Wave San Luis Obispo Wave Park*</b>		Morro Bay	Preliminary permit accepted for filing and public comment 12/08. Several motions to intervene (NMFS, communities, NGOs). Protest of MMS over jurisdiction. No longer on FERC website, possibly due to technical error.	Waiting for preliminary permit.	Buoys or other technology, 5 mW	3.1 x 7.1 miles. 1-3.5 miles from shore, 90-360 feet deep.
P-13052	Updated: 2/18/2009	<i>Possibly Federal waters</i>				
<b>Humboldt WaveConnect Project (PGE)*</b>		Eureka/Samoa	FERC asserted jurisdiction over outer continental shelf projects, including this one, 10/16/08. Ongoing discussions over whether FERC has jurisdiction over these projects. Filed 6-month progress report 2/27/09. Has been working with MMS on leasing in Federal waters. Many millions \$ spent or committed to project so far. Participating in town halls, etc. Waiting for MMS OCS rules.	Will apply for pilot license.	8-200 buoys or other technology, 40 mW	8-200 buoys. Research area: 136 square miles. 60-600 feet in depth. 2-10 miles from shore.
P-12779	Updated: 3/19/2009	<i>Possibly Federal waters</i>				
Preliminary permit issued	3/13/2008					

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<b>Mendocino WaveConnect Project (PGE)</b> P-12781 Updated: 3/19/2009 Preliminary permit issued 3/13/2008	Fort Bragg  <i>Possibly Federal waters</i>	FERC asserted jurisdiction over outer continental shelf projects, including this one, 10/16/08. Ongoing discussions over whether FERC has jurisdiction over these projects.	Planning for environmental and technology studies. Working with CH2M Hill on work plan.	Buoys or other technology, 40 mW	Research area: 68 square miles. 60-600 feet in depth. 0.5 to 6 miles from shore.
<b>San Francisco Bay Tidal Energy Project (Golden Gate Energy)*</b> P-12585-001 Updated: 3/19/2009 Preliminary permit issued 10/11/2005	San Francisco Bay	Preliminary permit for pilot project found lacking by FERC. FERC dismissed application 1/14/09. FERC may issue subsequent preliminary permit; wants further information from applicant by 2/21/09. Applicant provided information 2/20/09.	Awaiting FERC decision on dismissing application.	60 turbines/square mile, 1000 mW	60 turbines per square mile, located on sea floor. Footprint not specified.
<b>San Francisco Ocean Energy Project (Grays Harbor Ocean Energy)*</b> P-13308 Updated: 3/19/2009	20-30 miles off the coast, west of San Francisco, on the Outer Continental Shelf. Not visible from shore.  <i>Federal waters</i>	Permit application filed/accepted 12/5/09. City of San Francisco plans to file competing permit at a nearby site and wants FERC to deny this application; applicant protests.	Plans to use pilot project process.	100 WECs; may also use wind turbines on the WECs. May use oscillating water column technology.	Seafloor is sand, gravel, and mud. Considering using structures as artificial reefs.

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<b>San Francisco Oceanside Wave Energy Project (City and County of S.F.) (NEW)*</b>	P-13779	Updated: 3/19/2009	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).	San Francisco applied for Federal permit, in competition with Grays Harbor Energy Project (13308). Grays Harbor is protesting, saying projects are not in competition. Awaiting FERC decision.	Plans to apply for pilot license. Much preparatory work already completed. First, 3 MW; eventually up to 30 MW.	Not yet determined. Looking at several fully submerged devices.
<b>Ventura Ocean Energy Project (Grays Harbor Ocean Energy)*</b>	P-13309	Updated: 3/19/2009	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. <i>Federal waters</i>	Have applied for preliminary permit. Permit application accepted 12/5/09. Several motions to intervene (NMFS, fishing organizations); protest of MMS.	Plans to use pilot project process.	100 WECs; may also use wind turbines on the WECs. May use oscillating water column technology. Seafloor is sand, gravel, and mud. Considering using structures as artificial reefs.

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## Oregon

	<b>Location</b>	<b>Latest news</b>	<b>Next steps</b>	<b>Technology description</b>	<b>Footprint description</b>
<p><b>Coos Bay OPT Wave Park*</b>  P-12749                      Updated: 3/19/2009  Preliminary permit issued 3/9/2007  PAD submitted</p>	Coos bay	Submitted PAD 3/7/08. Filed progress report 8/20/08. Conducted agency meeting/site visit in November 2008. Comments of ODFW, others, received. ODFW believes planned project is too large.	OPT will use the traditional licensing process. Submitted progress report 2/27/09. Conducting various studies, meetings, etc.	200-400 buoys, 100 mW	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><b>Douglas County Project (Douglas County)</b>  P-12743                      Updated: 3/19/2009  Preliminary permit issued 4/6/2007  PAD submitted</p>	Winchester Bay	Submitted PAD 5/23/08. Much commenting activity. NMFS recommended not applying for 50-year license, given new technology. Submitted progress report 11/08. Douglas Co. provided a list of studies & information to obtain, 12/5/08.	Will use the traditional licensing process.	One jetty-based structure	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><b>Oregon Coastal Wave Energy Project (Green Wave)</b>  P-13047                      Updated: 3/19/2009    Preliminary permit issued 5/23/2008</p>	Nehalem, Rockaway, Garibaldi, Netarts, Nestucca, and Neskowin.	Submitted six-month progress report 10/31/08. No FERC activity since.	Fall 2008: Evaluate Garibaldi and Netarts deployment sites. Spring 2009: Decide which application process to use. Through 2010: Conduct meetings, studies, etc.	Buoys, 20-180 mW (total)	N/A

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<b>Principle Power Offshore Wind Project</b> Updated: 3/19/2009	Off Tillamook, OR	9/26/08 - Tillamook Intergovernmental Development Agency and Principle Power signed MOU for phased development off offshore wind plant. Have not yet applied for FERC permit. 11/24/08 - signed MOU with Tillamook PUD.		30 wind turbines, 5 MW each	
<b>Reedsport OPT Wave Park*</b> P-12713 Updated: 3/19/2009 Preliminary permit issued PAD submitted	Reedsport	OPT plans to place test buoy this year (2009). Has contracted with consulting firm to determine if wave energy at this site is feasible. Hoping for "green energy" money from stimulus package.	Will use TLP. Plan to submit draft license application October 2008, and to conduct NEPA process after license app is submitted.	10 buoys, up to 4.14 mW per year	Depth: 204-225'. Footprint: 0.25 sq. miles, sandy bottom.
<b>Washington</b>					
<b>Admiralty Inlet (Snohomish PUD)*</b> P-12690 Updated: 3/19/2009 Preliminary permit issued 3/9/2007 PAD submitted	Admiralty Inlet, Puget Sound	Considered most feasible of Snohomish projects. Studies, consultations ongoing. NOAA submitted comments 3/10/09 with detailed recommendations on studies needed to address fish/mammal/habitat impacts. (Informal consultation conducted with NMFS & USFWS)	Plan to submit draft license application in January 2010. Making plans for draft biological assessment.	1-5 turbines (type unknown), up to 5 mW	Bay/estuary habitat; 60-100 m deep; gravel/sandy bottom; much shipping & commercial traffic

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<p><b>Deception Pass (Snohomish PUD)*</b>  P-12687 Updated: 3/19/2009  Preliminary permit issued 3/1/2007  PAD submitted</p>	Deception Pass, Puget Sound	Submitted PAD 1/31/08; requested and was granted an extension for filing notice of intent. Provided 6-month progress report 1/29/09; general activity continues.	Plan to submit draft license application in January 2010.	Turbines (type, number unknown), 3 mW	Bay/estuary habitat; 30 m deep; rocky seafloor; mainly recreational use.
<p><b>Grays Harbor Ocean Energy and Coastal Protection (Washington Wave Co.)</b>  P-13058 Updated: 3/19/2009  Preliminary permit issued 7/31/08</p>	Grays Harbor  <i>Possibly Federal waters</i>	Conducting field studies, developing PAD, gathering information. Public comment says that there is broad community opposition to the project. Meant to be "a national demonstration site for offshore wave energy conversion on fixed structures."	Planning to choose licensing path and submit PAD in third quarter 2009; prepare licensing application in 2011.	12 oscillating water column units, 6MW (Eventually, wind turbines & buoys, 168-418 mW)	Up to 28 square miles. 1-3 miles offshore, 10-70 feet in depth. West of Ocean Shores and Westport.
<p><b>Guemes Channel (Snohomish PUD)*</b>  P-12698 Updated: 3/19/2009  Preliminary permit issued 2/22/2007  PAD submitted</p>	Guemes Channel, Puget Sound	Submitted PAD 1/31/08; requested and was granted an extension for filing notice of intent. Provided 6-month progress report 1/29/09; general activity continues.	Plan to submit draft license application in January 2010.	Turbines (type, number unknown), 3.5 mW	Bay/estuary habitat; 15 m. deep; gravel seafloor; commercial shipping traffic.
<p><b>San Juan Channel (Snohomish PUD)*</b>  P-12692 Updated: 3/19/2009  Preliminary permit issued 2/22/2007  PAD submitted</p>	San Juan Channel, Puget Sound	Submitted PAD 1/31/08; requested and was granted an extension for filing notice of intent. Provided 6-month progress report 1/29/09; general activity continues.	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)



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<b>Spieden Channel (Snohomish PUD)*</b> P-12689                      Updated: 3/19/2009  Preliminary permit issued 2/22/2007 PAD submitted	Spieden Channel, Puget Sound	Submitted PAD 1/31/08; requested and was granted an extension for filing notice of intent. Provided 6-month progress report 1/29/09; general activity continues.	Plan to submit draft license application in January 2010.	Turbines (type, number unknown), 8.3 mW	Bay/estuary habitat; 80 m. deep; gravel seafloor; commercial fishing use (salmon)
<b>Willapa Bay Tidal Energy Plant Water Power Project (Natural Currents)</b> P-12729                      Updated: 3/19/2009 Preliminary permit issued 3/29/2007	Willapa Bay	Conducting field testing of turbine unit (spring 2008). Meeting with state agencies, NMFS, tribes; gathering environmental, social, economic impact info. Submitted progress report 8/19.	Plan to submit draft application for pilot process 3/29/09. Earliest date for approval would be September 2009. Plan to do consultations in 2009-2010. (No FERC action since 8/19/08).	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.

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<b>DEFUNCT PROJECTS</b>						
<b>California</b>						
<b>Fairhaven OPT Wave Power Project</b> P-12780 <i>Defunct</i>	Updated: 3/27/2008	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
<b>Humboldt County Wave Project (PGE)*</b> P-12753 <i>Defunct</i>	Updated: 3/19/2009	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
<b>Mendocino Wave Energy Project (Chevron)</b> P-12806 <i>Defunct</i>	Updated: 1/15/2008	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
<b>Sonoma Coast Hydrokinetic Energy (Sonoma Co.)</b> P-13076 <i>Defunct</i>	Updated:	Sonoma Co.	Rejected - area too large, technology not specified.		?	N/A
<b>Oregon</b>						
<b>Columbia River project (Oregon Tidal Energy Co.)</b> P-12672 <i>Defunct</i>	Updated: 3/27/2008	Lower Columbia River	Preliminary permit surrendered - "insufficient development potential exists for either a full development or tidal project."		TISECs	River bottom.
<b>Coos County Wave Project (Finavera)</b> P-12752 <i>Defunct</i>	Updated: 6/2/2008 4/26/2007	Bandon	Permit cancelled 6/26/08 because no progress report or PAD was filed.		Buoys, 100-300 mW	5.5 square mile water footprint, 1.6 miles e/w by 3.4 miles n/s.

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<b>Florence Wave Park Project (Energetech)</b> P-12793 <i>Defunct</i>	Updated: 3/27/2008	Florence	Proposal withdrawn - no reason given.		Oscillating water column technology, 10 mW	Each structure's footprint is 35x15 meters, not counting cables. Structures extend 7 meters above water and 15 below.
<b>Lincoln County Wave Energy Research &amp; Demonstration Center (Lincoln Co.)</b> P-12727 <i>Defunct</i>	Updated: 5/5/2008	Lincoln County	Dismissed by FERC		Various.	Unknown
<b>Newport OPT Wave Park*</b> P-12750 <i>Defunct</i>	Updated: 3/19/2009 1/29/09	Newport/ Waldport <i>Possibly Federal waters</i>	Preliminary permit surrendered in order to focus on Coos Bay and Reedsport projects.	Licensee must develop NOI and PAD by 1/29/10	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
<b>Washington</b>						
<b>Agate Passage (Snohomish PUD)</b> P-12691 <i>Defunct</i> PAD submitted	Updated: 2/23/2009	Agate Passage, Puget Sound	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
<b>Makah Bay Offshore Wave Energy Pilot Project (Finavera)*</b> DIO2-3 <i>Defunct</i>	Updated: 2/11/2009	Makah Bay (Neah Bay)	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.
<b>Rich Passage (Snohomish PUD)</b> P-12688 <i>Defunct</i> PAD submitted	Updated: 3/19/2009	Rich Passage, Puget Sound	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.

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<b>Tacoma Narrows (Tacoma Power)</b>		Tacoma	Doing feasibility studies.	Prelim permit issued	Up to 64 turbines, 1-20	In estuary (HAPC). Footprint
P-12612	Updated: 2/18/2009	Narrows, Puget Sound	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.	2/22/06; expressed intent to use pilot process; but now looks unfeasible.	mW	unknown.
<b>Defunct</b>						